Division 5-1

Request:

For each benefit-cost analysis included in the rate case filing, please provide all workpapers, workbooks, and calculations in machine-readable format with formulas intact.

Response:

Please see Attachments DIV 5-1-1 [CONFIDENTIAL], DIV 5-1-2 [CONFIDENTIAL], and DIV 5-1-3. Attachment DIV 5-1-1 [CONFIDENTIAL] contains the benefit-cost analysis (BCA) of the Company's proposed advanced metering functionality (AMF) proposal for the Rhode Island only implementation scenario, as described in Chapter 4 of the Company's Power Sector Transportation Plan.[1] Attachment DIV 5-1-1 [CONFIDENTIAL] includes the input assumptions, deployment schedules, and calculations used to arrive at the results summarized in Table 4-6 of Schedule PST-1.[2] Attachment DIV 5-1- 2 [CONFIDENTIAL] contains the benefit-cost analysis (BCA) of the Company's proposed AMF deployment proposal for the joint Rhode Island and New York Niagara Mohawk Power Corporation implementation, as described in Chapter 4 of the Company's Power Sector Transformation Plan.[3] Attachment DIV 5-1-2 [CONFIDENTIAL] includes the input assumptions, deployment schedules, and calculations used to arrive at the results summarized in Table 4-7 of Schedule PST - 1.[4]

Attachment DIV 5-1-3 contains the BCAs for the Company's proposed Electric Transportation Initiative, Electric Heat Initiative, Energy Storage Investments, and Company-Owned Solar Facilities and Income Eligible Rewards Program, described in Chapters 5, 6, 7, and 8, respectively, of the Company's PST Plan. Tab 1 of Attachment DIV 5-1-3 provides a summary of the results for all four BCAs included in the workbook; Tabs 2 through 7 include the input assumptions and calculations specific to the Electric Transportation BCA; Tabs 8 through 12 include input assumptions and calculations specific to the Electric Heat BCA; Tabs 13 through 18 include the input assumptions and calculations specific to the Company Owned Solar Facilities and Income Eligible Rewards BCA; Tabs 19 through 23 include the input assumptions and calculations specific to the Energy Storage Investments BCA; Tab 24 includes general input assumptions used for multiple BCAs.

Each of the BCAs represented in the three attachments to this response includes numerous input assumptions and calculations derived from a variety of sources. The sources used for inputs to

[1] The Narragansett Electric Company, d/b/a National Grid, Investigation as to the Propriety of the Proposed Tariff Changes, Rhode Island Public Utilities Commission, RIPUC Docket No. 4770, November 27, 2017, Schedule PST-1, Chapter 4 – AMF, at 3, 27-31.
[2] *Id*. at 28 (Bates Page 96).
[3] *Id*. at 3, 27-31 (Bates Pages 71, 95-99).
[4] *Id*. at 28-29 (Bates Pages 96-97).

each BCA are provided in Appendix 2.1 to the Company's Power Sector Transformation Plan, and are noted throughout the attachments to this response.

(This response is identical to the Company's response to Division 1-1 in Docket No. 4780.)

Confidential Attachment DIV 5-1-1 – REDACTED INFORMATION

Attachment DIV 5-1-1 [CONFIDENTIAL] is comprised of an Excel file containing the benefit-cost analysis of the Company's proposed advanced metering functionality proposal for the Rhode Island only implementation scenario. The Company has requested protective treatment of the Excel file in its entirety.

Confidential Attachment DIV 5-1-2 – REDACTED INFORMATION

Attachment DIV 5-1-2 [CONFIDENTIAL] is comprised of an Excel file containing the benefit-cost analysis of the Company's proposed advanced metering functionality deployment proposal for the joint Rhode Island and New York Niagara Mohawk Power Corporation implementation scenario. The Company has requested protective treatment of the Excel file in its entirety.

Division 5-2

Request:

For each benefit-cost analysis included in the rate case filing, please describe each methodology or assumption that is different from the methodologies and assumptions used by the Company when modeling the cost-effectiveness of its energy efficiency programs.

Response:

Wherever applicable and appropriate, the benefit-cost analysis (BCA) methodologies and assumptions relied upon for each of the investments proposed in the Company's Power Sector Transformation (PST) Plan are aligned with those used by the Company when modeling the cost-effectiveness of its energy efficiency programs. The methodologies and assumptions used for the PST BCAs that differ from those used by the Company when modeling the cost-effectiveness of energy efficiency programs in its 2018 Energy Efficiency Program Plan (EEP)[1] are as follows:

- **Cost test:** The cost-effectiveness of each PST investment was evaluated based primarily on a Societal Cost Test (SCT). For each PST investment, the Company also has included the results of a Rate Impact Measure (RIM) to present the monetary benefits to all customers relative to associated costs.[2] The benefits and costs included in the SCT and RIM are shown in Appendix 2.1 - Program BCA of the Company's Power Sector Transformation Plan.[3] The benefits and costs included in the SCT were those benefits and costs listed in Appendix B: Benefit-Cost Framework of the Docket 4600 Stakeholder Working Group Process, Report to the Public Utilities Commission (Stakeholder Report), which the Public Utilities Commission (PUC) incorporated into its Guidance on Goals, Principles and Values for Matters Involving The Narragansett Electric Company d/b/a National Grid (Docket 4600 Guidance Document),[4] and which represent net societal impacts resulting from utility investment that the Company was able to quantify and monetize based on available data and methods. The benefits and costs included in the RIM test were those benefits and costs listed in Appendix B of the Docket 4600

[1] The Narragansett Electric Company d/b/a National Grid, 2018 Energy Efficiency Program Plan (EEP) 8, Settlement of the Parties, RIPUC Docket No. 4755, November 1, 2017, Attachment 4– 2018 Rhode Island Test Description.
[2] *See* The Narragansett Electric Company d/b/a National Grid, Investigation as to the Propriety of the Proposed Tariff Changes, Rhode Island Public Utilities Commission, RIPUC Docket No. 4770, November 27, 2017, Schedule PST-1, Chapter 2 – 4600 Goals/Framework, at 5-6 (Bates Pages 36-37 of PST Book 1).
[3] *See Id*., Appendix 2.1 – Program BCA, at 4 (Bates Page 196 of PST Book 1).
[4] *See* Docket 4600 Stakeholder Working Group Process, Report to the Public Utilities Commission (Stakeholder Report), RIPUC Docket No. 4600, April 5, 2017, Appendix B: Benefit-Cost Framework; *see also* Report and Order No. 22851, RIPUC Docket No. 4600, at 23, 29 (July 31, 2017) (accepting the Stakeholder Report and adopting the Benefit-Cost Framework).

Guidance Document, which represent net monetary ratepayer impacts resulting from utility investment that the Company was able to quantify and monetize based on available data and methods.

The cost-effectiveness of the Company's energy efficiency programs are evaluated based on the Rhode Island Benefit Cost Test (RI Test), pursuant to the Least Cost Procurement Standards (Standards) for the procurement of energy efficiency resources.[5] The benefits and costs included in the RI Test for energy efficiency programs are listed in Attachment 4 – 2018 Rhode Island Test Description to the Company's 2018 EEP.[6] With the exception of economic development benefits, each benefit and cost listed in the RI Test Description for the Company's 2018 EEP aligns with a benefit or cost considered under the SCT that the Company to evaluate the proposed PST investments.[7] As described in Chapter 2 of the PST Plan[8], economic development benefits are not included in the SCT that the Company used to evaluate the proposed PST investments, but are included as qualitative benefits in Chapters 4 through 8 of the PST Plan as part of the overall business case for each proposed investment.

- **Discount rate:** The discount rate used to estimate the net present value of the costs and benefits associated with each PST investment is the Company's after-tax weighted average cost of capital (WACC). The discount rate used by the Company to evaluate energy efficiency programs for the Annual Energy Efficiency Plan for 2018 is the twelve-month average of the historic yields from a ten-year United States Treasury note, using the 2016 calendar year to determine the twelve-month average.[9] Please refer to the Company's response to Division 5-4 for more information on this difference.

- **Electric Transmission Capacity and Distribution Capacity Benefits/Avoided Transmission and Distribution Capacity Infrastructure:** Under the RI Test that the Company used to evaluate statewide energy efficiency programs, a statewide marginal cost of transmission and distribution capacity is calculated based on Company-specific historical and forecast incremental capital investments caused by load growth and is applied to summer demand reductions resulting from the energy efficiency measure. [10]

[5] *See* Rhode Island Energy Efficiency and Resource Management Council (EERMC) – Proposed Energy Efficiency Savings Targets for The Narragansett Electric Company d/b/a National Grid's Energy Efficiency and System Reliability Procurement for the Period 2018-2020, RIPUC Docket No. 4684, Least Cost Procurement Standards, , July 27, 2017, Section 1.2(B).
[6] *See* 2018 EEP, Settlement of the Parties, Attachment 4– 2018 Rhode Island Test Description, at 4-9.
[7] Under the SCT, which the Company used to evaluate the proposed PST investments, any water and sewer benefits resulting from the proposed investments would be a sub-category of Net Non-Energy Benefits; Natural gas benefits would be considered under Non-Electric Avoided Fuel Costs.
[8] *See* Investigation as to the Propriety of the Proposed Tariff Changes, Schedule PST-1, Chapter 2 – 4600 Goals/Framework, at 6 (Bates Page 37 of PST Book 1).
[9] *See* 2018 EEP, Settlement of the Parties, Attachment 4– 2018 Rhode Island Test Description, at 18.
[10] 2018 EEP, Settlement of the Parties, Attachment 4– 2018 Rhode Island Test Description, at 7-8.

The methodology used to evaluate the proposed PST investments calculates avoided transmission and distribution capacity infrastructure benefits based on location-specific peak demand reductions valued at the marginal cost of distribution system infrastructure avoided or deferred by the project.[11] This methodology is included in the list of candidate methodologies for the distribution capacity costs benefit/cost category in Appendix B: Benefit-Cost Framework, which is incorporated into the Docket 4600 Guidance Document.[12]

- **Delivered Fuel Benefits/Non-Electric Avoided Fuel Cost:** The proposed Electric Heat Initiative BCA relies on the 2017 EIA Annual Energy Outlook forecasts[13] for oil and propane fuel price assumptions, while the Annual Energy Efficiency Plan for 2018 relies on oil and propane fuel price forecasts from the Avoided Energy Supply Costs in New England: 2015 Report.[14] The 2017 EIA forecast was chosen for evaluating the proposed Electric Heat Initiative investment to reflect the most recently modeled projections available at the time.

(This response is identical to the Company's response to Division 1-2 in Docket No. 4780.)

[11] The five proposed PST investments are not expected to result in load reduction impacts that avoid the need for incremental transmission or distribution infrastructure; therefore, these benefits are not included in the BCA results presented in Chapters 4 through 8 of the PST Plan.
[12] *See* Stakeholder Report, Appendix B: Benefit-Cost Framework.
[13] *See* U.S. Energy Information Administration, Annual Energy Outlook 2017, Table: Energy Prices by Sector and Source, New England Residential Energy Price Forecast, Reference Case.
[14] *See* Hornby, Rick et al., Avoided Energy Supply Costs in New England: 2015 Report, March 27, 2015, Revised April 3, 2015, Appendix D, Avoided Costs of Other Fuels.

Division 5-3

Request:

For each benefit-cost analysis included in the rate case filing, please use a societal discount rate of 3.0% (in real terms). Please provide all workpapers, workbooks, and calculations in machine-readable format with formulas intact.

Response:

The Company did not re-run the benefit-cost analyses included in its rate case filing using a societal discount rate of 3.0 percent, as the use of such an alternative discount rate will produce misleading results. The use of the Company's weighted average cost of capital (WACC) is the appropriate discount rate for estimating the net present value of the proposed Power Sector Transformation projects, as each represents utility investment and the associated costs to deploy capital and other expenses borne directly by utility customers.[1] The use of a discount rate that is lower than the Company's WACC may inappropriately under-value near term costs and benefits relative to more speculative benefits accrued at the end of the forecast period, potentially resulting in over-estimation of the cost-effectiveness of the proposed investments.

(This response is identical to the Company's response to Division 1-3 in Docket No. 4780).

[1] For more detailed explanations of why the utility WACC is a more appropriate discount rate for evaluating utility investments than a lower societal discount rate, see for example: Reply Comments of the Joint Utilities Regarding Staff White Paper on Benefit-Cost Analysis, State of New York Public Service Commission Case 14-M-0101, September 10, 2015, pp. 21-16 included as Attachment DIV 5-3-1; and Comments of Massachusetts Electric Company d/b/a National Grid in Massachusetts Department of Public Utilities Docket No. D.P.U. 12-76, August 22, 2014, pp. 15-19 included as Attachment DIV 5-3-2.

Janet M. Audunson, P.E., Esq.
Senior Counsel II

September 10, 2015

VIA ELECTRONIC DELIVERY

Honorable Kathleen H. Burgess
Secretary
New York State Public Service Commission
Three Empire State Plaza, 19th Floor
Albany, New York 12223-1350

RE: Case 14-M-0101 – Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision

Reply Comments of the Joint Utilities Regarding Staff White Paper on Benefit-Cost Analysis

Dear Secretary Burgess:

In response to the Notice Inviting Public Comment on Staff White Paper on Benefit-Cost Analysis issued by the Commission on July 2, 2015 in Case 14-M-0101, Niagara Mohawk Power Corporation d/b/a National Grid, Central Hudson Gas and Electric Corporation, Consolidated Edison Company of New York, Inc., Orange and Rockland Utilities, Inc., New York State Electric & Gas Corporation, and Rochester Gas and Electric Corporation (collectively the "Joint Utilities") hereby submit for filing their Reply Comments.

Respectfully submitted,

By: */s/ Janet M. Audunson*

Janet M. Audunson
Senior Counsel II

Enc.

cc: Denise Gerbsch, DPS Staff, w/enclosure (via electronic mail)
Susan Vercheak, Con Edison, w/enclosure (via electronic mail)
Joseph Hally, Central Hudson, w/enclosure (via electronic mail)
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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision	**)**	**Case 14-M-0101**

REPLY COMMENTS OF THE JOINT UTILITIES REGARDING STAFF WHITE PAPER ON BENEFIT-COST ANALYSIS

Dated: September 10, 2015
Syracuse, New York

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision	**)**	**Case 14-M-0101**

REPLY COMMENTS OF THE JOINT UTILITIES REGARDING STAFF WHITE PAPER ON BENEFIT-COST ANALYSIS

I. INTRODUCTION

In response to the Notice Inviting Public Comment on Staff White Paper on Benefit-Cost Analysis ("BCA White Paper")[1] issued by the New York Public Service Commission (the "Commission") on July 2, 2015 (the "Notice") in the Reforming the Energy Vision Proceeding ("REV"),[2] Consolidated Edison Company of New York, Inc., Orange and Rockland Utilities, Inc., Central Hudson Gas and Electric Corporation, Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid"), New York State Electric & Gas Corporation, and Rochester Gas and Electric Corporation (collectively the "Joint Utilities") hereby file their Reply Comments.

II. EXECUTIVE SUMMARY

The Joint Utilities appreciate this opportunity to reply to the initial comments of other parties on the BCA White Paper. As the Joint Utilities and other parties indicated in their initial

[1] Case 14-M-0101 - Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision ("REV Proceeding"), *Staff White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding* (issued July 1, 2015) ("BCA White Paper").

[2] REV Proceeding, *Notice Inviting Public Comment on Staff White Paper on Benefit-Cost Analysis* (issued July 2, 2015) ("Notice"). Subsequently, the deadline for filing initial comments was extended by the Secretary to August 21, 2015 with reply comments due by September 10, 2015. *See* REV Proceeding, *Notice Confirming Extension of Deadline for Public Comment on Staff White Paper on Benefit-Cost Analysis* (issued August 11, 2015).

comments, the Benefit Cost Analysis tests ("BCA" tests) themselves and the overall framework for applying them ("BCA Framework") are critical elements for the cost-effective implementation of REV. In response to the initial comments filed by other parties, the Joint Utilities state that:

1. The primary purpose of the BCA Framework must be that the New York State electric grid continues to provide safe, adequate, and reliable electric service at a reasonable rate to all customers. (Section III.A)
2. When a specific grid need has been identified and specific functionality is required to meet that need, other benefits (*e.g.*, environmental attributes), however desirable, should not be treated as trade-offs or substitutions for that functionality. (Section III.B)
3. DER functionalities and attributes vary. Specific types of DER may only be applicable in certain specific situations. (Section III.B)
4. The Distributor Cost Test ("DCT") as proposed in the Joint Utilities Initial Comments remains the most appropriate BCA test to use for certain applications within REV. A number of practical matters will make it difficult and contentious to use the SCT. (Section IV.A)
5. Should the Commission designate the Societal Cost Test ("SCT") for primary use in REV decision-making and resource selection and determine that costs the utilities and their customers do not avoid should be monetized, rate and/or bill impacts should also be transparently assessed with specificity regarding funding sources. (Section IV.B)
6. The marginal damage cost approach to reflecting environmental externalities in the BCA Framework (Approach 2) is an unsound method to value avoided greenhouse

gas ("GHG") emissions and criteria air pollutants because of the danger of creating multiple conflicting price signals. It is equally unsound to expand the scope of environmental externalities to be considered. (Sections IV.A, C, and E)

7. The Joint Utilities oppose the inclusion and widespread use of non-energy benefits, but if the Commission rules to include them, only non-energy benefits that can be objectively quantified should be considered and only within the SCT (*i.e.*, remove those benefits from the Rate Impact Measure ("RIM"), DCT, and Program Administrator Cost ("PAC) tests). (Sections IV.A and IV.E)
8. If the State desires greater GHG emission reductions from the power sector than what is required under the present RGGI program, the most direct and efficient approach is to work with the other RGGI member states to continue to ratchet down the RGGI emissions cap. The establishment of CO_2 prices outside of RGGI will provide inaccurate price signals to customers and distributed energy resources ("DER") providers and could result in over- or under-investment in DER. (Section IV.C)
9. The appropriate discount rate to be used in the DCT is the utility weighted average cost of capital ("WACC"). The WACC should be used for the SCT as well, because both traditional utility projects and the associated DER selected as part of non-wires alternatives ("NWA") would be funded partially or wholly by the utilities. There is no evidence supporting the concept that the average discount rate for utility customers is at the level implied by the societal rate. In any case, use of a low societal discount rate should be avoided because it places too much weight on assumptions at the end of the forecast period when forecasted benefits and costs are least certain. (Section IV.E)

10. Consistent with the new general principle recommended in the Joint Utilities' Initial Comments that "the process for applying and updating the Benefit Cost Analysis Handbooks ("BCAH") should not be costly or administratively burdensome for any party," the use of sensitivity analyses should be limited to those that are practicable and likely to prove informative to decision-making. (Section V)
11. The Joint Utilities continue to support the filing of the initial BCAH with the Distributed System Implementation Plans ("DSIPs"), currently set as June 30, 2016.[3] The BCAH should establish guidelines and should be updated annually. (Section V)
12. The Joint Utilities will begin developing a common BCAH outline employing the DCT as the economic test for evaluating alternatives to traditional utility projects. (Section V)

III. THRESHOLD CONSIDERATIONS

A. Primary Purpose of BCA

The Joint Utilities agree with those parties that believe an outcome-neutral BCA is required to create a level playing field that selects the most cost-effective grid assets (traditional or DER).[4] To achieve this goal, the BCA test should consider whether a portfolio of DER is cost effective for customers of a de-regulated utility as compared to a traditional utility investment. Environmental and non-energy benefits and other public policy considerations should only be considered after a potential project has successfully passed a BCA test. As discussed below,

[3] REV Proceeding, *Notice Extending Deadlines Regarding Filings Related to Distributed System Implementation Plans* (issued September 4, 2015).

[4] *See generally* Benefit-Cost Analysis Comments of the Exelon Companies (August 21, 2015) ("Exelon Companies Comments"), pp. 2-5; *see also* Initial Comments of Multiple Intervenors on "White Paper on Benefit-Cost Analysis in the Reforming Energy Vision Proceeding" (August 21, 2015) ("MI Comments"), p. 2; *see also* Initial comments of New York Affordable Reliable Electricity Alliance (August 20, 2015), pp. 1-2.

when these additional factors are considered, the impact on customer rates and bills should also be concurrently evaluated.[5]

This view is consistent with the intent of REV, based on the Commission's original identification of six REV objectives,[6] to maintain and improve the performance and cost-effectiveness of the electric system for customers. Should these objectives not be achieved, it is unlikely that REV will be considered successful by customers, even if, as the Joint Utilities expect and support, REV helps to facilitate reductions in GHG emissions.[7]

It is apparent that many other parties see the primary purpose of the BCA differently. The Advanced Energy Economy Institute, *et al*. ("AEEI") caution that the BCA should not be a barrier to DER, pointing out that BCA "[s]implifications, where needed, should err on the side of achieving REV's key objective of using DER to meet customer and system needs."[8] New York Geothermal Energy Organization would modify the BCA to capture the benefits unique to their technologies.[9]

Many parties would have the Commission direct the Joint Utilities to apply the BCA Framework in a manner that they believe would maximize environmental and other non-energy benefits, with little regard for the cost to customers. For example the New York State

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[5] The Joint Utilities view this perspective as fully consistent with the use of the DCT.

[6] The six REV objectives are: (1) enhanced customer knowledge and tools to support effective management of total energy bill; (2) market animation and leverage of ratepayer contributions; (3) system-side efficiency; (4) fuel and resource diversity; (5) system reliability and resiliency, and (6) reduction of carbon emissions. REV Proceeding, *Order Instituting Proceeding* (issued April 25, 2014), p. 2. Of these, the Joint Utilities note that three pertain to the grid, two to the customer bill, and one to the environment.

[7] In addition, as noted in the Joint Utilities' Initial Comments, the primary although not the sole users, of the BCA Framework are likely to be the utilities, who are responsible for providing safe, adequate, and reliable electric service to customers at reasonable rates.

[8] Comments on Staff White Paper on Benefit-Cost Analysis in the Reforming the Energy Vision Proceeding of the Advanced Energy Economy Institute, on behalf of the Advanced Energy Economy (AEE), the Alliance for Clean Energy New York (ACE NY), and the New England Clean Energy Council (August 21, 2015) ("AEEI Comments"), p. 5.

[9] Initial Comments on the 7/1/15 Staff White Paper on Benefit-Cost Analysis from the New York Geothermal Energy Organization (August 21, 2015) ("NY-GEO Comments"), pp. 2-5.

Department of Environmental Conservation ("NYSDEC") is concerned that "if the BCA is not appropriately designed it will not adequately stimulate the energy transition that New York State committed to in the State Energy Plan," as is Acadia Center.[10] As discussed further in Section IV below, a number of parties support the use of the SCT as the BCA test and press for quantification of non-energy benefits and the addition of more non-energy benefits.

These parties see the primary purpose of the BCA and the REV proceeding in general as developing and implementing a policy of maximizing the deployment of DER. They would achieve this by crediting DER with claimed environmental and non-energy benefits sufficient to make DER pass a BCA test and would then presumably seek to convert those benefits to direct payments to DER providers. This suggests adjusting the test to produce the desired outcome rather than allowing the test to determine the outcome. While the motivation of parties advocating this perspective is clear, this skews the results and does not allow for an objective analysis of a potential project. Moreover, there are policies already in place in New York State that address the major environmental externalities from the electricity system and reflect compliance costs in energy prices. Therefore, it is inappropriate to use the BCA as a vehicle to maximize DER penetration through claimed environmental and non-energy benefits.

B. Functionality vs. Other Benefits

Section VII.A of the Joint Utilities' Initial Comments recommends an initial screen to be applied when determining whether traditional utility distribution solutions would be compared to NWA proposals. This step is consistent with a normal resource procurement process, where the proposal is first screened to determine whether it meets the threshold functional performance

[10] Comments of New York State Department of Environmental Conservation's Office of Air Resources, Climate Change and Energy and Office of General Counsel (August 21, 2015) ("NYSDEC Comments"), pp. 3-4; Acadia Center Comments on Benefit-Cost Analysis White Paper (August 21, 2015) ("Acadia Center Comments"), p. 2.

requirements, and only then is the proposal subject to some form of cost-effectiveness evaluation. Here, utility distribution solutions would be screened to determine whether they can reasonably be replaced or deferred by DER before NWA proposals would be considered.

It is critical for the Commission and all parties to understand that regardless of bulk power system, environmental, and non-energy benefits, DER can substitute for traditional distribution utility solutions only if they can provide acceptably equivalent functionality. In other words, DER must allow the utility to continue to provide safe, adequate, and reliable service to all customers on the phase, circuit, and substation. In order for DER to operate without impacting safe, adequate, and reliable service, incremental services will be required from utilities with associated costs, which must be considered in the BCA analysis.

In their initial comments, various parties propose grid benefits be taken into account in the BCA tests, including:

- Line loss reduction (Peak Power LLC)[11]
- Optionality, maintaining critical load (New York Battery and Energy Storage Technology Consortium)[12]
- System efficiency improvements, islanding ability, local emergency power (Energy Storage Association)[13]
- Voltage management and power factor improvement, avoided resiliency-specific upgrades such as converting distribution feeders to an underground system, avoided restoration costs, extended equipment lifetimes/deferred replacements due to reduced loading and "wear and tear" (AEEI)[14]
- Reliability, avoided outage costs, resiliency (City of New York)[15]
- Resiliency, reliability, public safety benefits (Exelon Companies)[16]

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[11] Comments of Peak Power LLC on Staff White Paper on Benefit-Cost Analysis (August 21, 2015) ("Peak Power Comments"), pp. 5-6.

[12] Comments of New York Battery and Energy Storage Technology Consortium on the Department of Public Service (DPS) Staff White Paper on Benefit-Cost Analysis (August 21, 2015) ("NY-BEST Comments"), pp. 7-8.

[13] Comments of the Energy Storage Association (August 21, 2015), p. 4.

[14] AEEI Comments, pp. 16-19.

[15] Comments of the City of New York On Benefit Cost Analysis Framework (August 21, 2015) ("City of New York Comments"), pp. 4 & 9.

[16] Exelon Companies Comments, p. 8.

- Power quality, reliability, resiliency, avoided operation and maintenance ("O&M") costs (The Alliance for Solar Choice)[17]

At least some of these may be included in defined BCA test benefit categories and, in that context, they should be considered for inclusion in the BCA test. To the extent that data exists to reliably quantify these values and determine that the costs are verifiably avoidable and material, (and to the extent that actual DER performance along these dimensions can be measured and verified at a reasonable cost), the Joint Utilities are prepared to consider inclusion of these components in the BCA tests.

As noted in the Joint Utilities Initial Comments, the BCA tests are initially proposed to be used for screening NWA projects in competitive procurements, where prices will be determined during the competitive procurement process rather than from the results of the BCA Framework application.[18] Therefore, the inclusion of any factors in a BCA test, including those listed above, will not directly determine DER payments.

IV. ECONOMIC CONSIDERATIONS OF BCA TESTS

A. Applicability of the DCT as the BCA Test and Relationship to RIM

As indicated above, several parties support applying the BCA tests in a way that objectively quantifies the marginal benefits and costs of DER compared to traditional utility investments so that the most cost-effective set of resources are pursued to meet distribution

[17] The Alliance for Solar Choice Comments on Staff White Paper on Benefit-Cost Analysis (August 21, 2015) ("TASC Comments"), pp. 10-11.

[18] The Joint Utilities Initial Comments noted that further work would be necessary to determine how best to use the BCA tests to develop tariffs. Further work would also be necessary to determine how best to factor these benefits into such tariffs, if they are included in the BCA tests.

system needs.[19] Only the Joint Utilities proposal to apply the DCT as the test for evaluating NWA projects can lead to this outcome.

The DCT provides an objective way to evaluate the cost of pursuing a portfolio of DER relative to deferring and/or avoiding traditional projects on the basis of the costs and benefits the distribution utility will directly realize. This implicitly addresses the customer concerns articulated by MI and the City of New York[20] because the DCT will select alternative solutions only to the extent that they reduce costs while maintaining performance relative to the traditional utility solution. As such, the DCT may obviate the need to conduct the RIM test, although the Joint Utilities have no objection to retaining the RIM test as well.

Various parties criticized the RIM test. The Northeast Energy Efficiency Partnerships consider the RIM methodologically flawed because it includes the recovery of lost revenues and focuses on rate impacts rather than bill impacts and the Environmental Defense Fund finds the RIM not meaningful because it says almost nothing about the magnitude of the rate impact.[21] The Joint Utilities submit that the Commission's fundamental public service responsibilities require it to retain an explicit valuation of customer costs through either the RIM test or an alternative approach.

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[19] Exelon Companies Comments, pp. 3, 6-7; MI Comments, pp. 3-7, and Comments of AARP and PULP (August 21, 2015) ("AARP/PULP Comments"), pp. 1-4.

[20] MI Comments, pp. 3 & 6; City of New York Comments, p. 15.

[21] Comments of Northeast Energy Efficiency Partnerships on Staff White Paper on Benefit-Cost Analysis (August 21, 2015), p. 3; Comments of Environmental Defense Fund Regarding the Staff White Paper on Benefit-Cost Analysis Framework (August 21, 2015) ("EDF Comments"), pp. 4-5.

B. SCT

Several parties advocated for the application of the SCT as the sole test or as the primary test for evaluating DER.[22] The Joint Utilities assert that implementing the BCA solely (or even primarily) based on SCT is contrary to at least two of the Commission's REV objectives because the SCT would create a bias to reject utility projects that were more cost-effective than a DER portfolio. Such a result violates the REV objective of ***market animation and leverage of ratepayer contributions*** and, because of the inherent bias against traditional utility projects, would tend to degrade the REV objective of ***system reliability and resilience.***[23]

If the Commission does choose to use the SCT as the primary determinant for assessing the relative economics of both wires projects and NWA projects, it is imperative that the Commission also require a thorough analysis of rate and bill impacts over the duration of the BCA. Failure to do so could result in a portfolio of projects that could increase rates and bills for customers.

The flaws in the SCT are further compounded by the suggestions of various parties to quantify items that are inherently difficult to quantify and/or highly contentious. Several commenters propose to start with "placeholders" that would further bias the BCA results until a more objective value can be determined.[24] This approach would effectively force customers to pay for resources on the basis of subjective valuations of contentious items.

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[22] *See*, *e.g.*, AEEI Comments, pp. 2-3 & 12; Initial Comments of Citizens for Local Power on N.Y. Department of Public Service Staff White Paper on Benefit Cost Analysis, p. 2; and EDF Comments, p. 5.

[23] REV Proceeding, *supra*, note 5.

[24] Pace Energy and Climate Center Response to the New York State Department of Public Service Staff White Paper on Benefit Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015), p. 14. *See also*, Citizens' Environmental Coalition Comments on Staff White Paper on Benefit Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015) ("CEC Comments"), pp. 7-8. *See generally*, National Resources Defense Council Comments to New York State Department of Public Service Benefit Cost Analysis White Paper (August 21, 2015) ("NRDC Comments"), pp. 20-21.

Others parties propose to effectively ignore established market valuations and substitute artificial values. For example, several parties propose to superimpose an artificially high value for CO_2 in place of the market-based costs from the RGGI cap-and-trade market in which New York State participates. At the high end of these proposals is the argument put forth by Peak Power LLC that over $200/ton may be the true cost of carbon.[25] Such a CO_2 valuation would have the effect of superimposing a price increase of roughly $100/MWH on any traditional electricity use. This impact equates to at least a 50 percent rate increase for a number of the Joint Utilities. Similarly, the potential for upward pressure on rates would likely be exacerbated if the Commission: (1) selects Approach Number 2 to value avoided GHG costs (Section IV.B); and/or (2) includes a variety of non-energy benefits in the SCT. Upward pressure on rates would occur in this situation because the SCT would select DER portfolios requiring customer payments that are not only in excess of the utility's avoided cost under the DCT but also in excess of the direct bulk system avoided cost benefits that customers receive from the deployment of DER.

If the Commission desires to employ the SCT, it should establish a process to first assess whether the presumed benefits and costs can be objectively quantified, as has been proposed by the City of New York.[26] Furthermore, the quantifiable benefits and costs must be material enough to justify the time and effort for their quantification and application within the BCA Framework. This step is essential to prevent the BCA process from becoming a theoretical exercise, at customers' expense, of trying to quantify information which may not "move the needle" in the anticipated valuation of projects.

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[25] Peak Power Comments, p. 8.
[26] City of New York Comments, pp. 2-3.

Moreover, the selection of the BCA components and the values placed on them may bias the NWA selection process in favor of particular DER outcomes. If the BCA Framework is used to set prices for DER it will have a direct impact on customer bills and rates, as well as the level of environmental benefits monetized and transferred from society as a whole to individual DER providers. The Joint Utilities urge that these potential effects be taken into consideration if and when such a process is designed and implemented.

C. Emissions and Other Environmental Externalities

The optimal market-based GHG emission reduction policy for the power sector would apply a single carbon price for all relevant economic actors and decisions that would equalize the marginal abatement costs across the sector—constituting a "level playing field" among all options for reducing power sector GHG emissions. The RGGI program sets the binding cap for aggregate emissions that creates a market-based price for CO_2 which, in turn, is captured in the locational-based marginal price ("LBMP") of electricity. If the State desires to achieve greater GHG emission reductions from the power sector than what is required under the present RGGI program, the most direct and efficient approach is to work with the other RGGI member states to continue to ratchet down the RGGI emissions cap. The reasonableness of such an approach is apparent from the fact that at least six of the nine RGGI states (accounting for roughly 70 percent of power sector emissions covered by the program) have state GHG emission reduction goals comparable to New York State's goal of 80 percent by 2050.

It is important to recognize that the positions taken by various parties in this proceeding could result in the situation where CO_2 emissions are valued in three different forums: (1)

RGGI, (2) Large-Scale Renewable solicitations (depending on Commission final decision),[27] and (3) values determined in REV from the BCA Framework. Three separate and distinct price signals for CO_2 emissions have the potential to create market confusion and lead to investment decisions that may not be optimal. In order to cost-effectively advance the State's energy policy goals and promote an economically efficient electricity system for New York State, the BCA Framework must treat environmental externalities appropriately. Existing environmental policies implicitly or explicitly establish market values for avoided air emissions from fossil fuel-fired electricity generation, and those market values (as embedded in New York Independent System Operator ("NYSIO") wholesale prices) should be the sole basis for capturing environmental benefits in any BCA test. This is Approach 1 of the BCA White Paper, and the Joint Utilities endorse this approach. Moreover, the Joint Utilities believe that the BCA Framework should reflect the primary environmental issues related to the electricity sector and New York State energy policy—namely reduction of GHG and other harmful air emissions.

Use of non-market-based values for air emission reductions that already have market values or expansion of the scope of analysis to include far-reaching purported environmental benefits have four primary drawbacks that the Commission should address:

1. Customers may pay for environmental benefits that, on net, society will not actually realize because the RGGI program sets a binding emissions cap and the price of tradable emissions allowances is embedded in NYISO wholesale prices. As a result, the aggregate CO_2 emissions from electric generators in the nine RGGI states will be the same regardless of the avoided emissions values assigned to DER. The same

[27] Case 15-E-0302 – In the Matter of the Implementation of a Large-Scale Renewable Program, *Notice Instituting Proceeding, Soliciting Comments and Providing for Technical Conference* (issued June 1, 2015).

basic features and implications also apply to other existing cap-and-trade programs for criteria air pollutants.

2. If used as an environmental policy tool, the BCA Framework will create an "un-level playing field" in favor of energy resources that will only achieve State energy and environmental policy goals at a higher cost to customers. More cost-effective policy mechanisms that can send consistent price signals across the power sector to spur clean energy investments and emission reductions already exist, and New York State should use these as the basis for achieving more aggressive policy goals.
3. An expansive view of externalities and their valuation will render the BCA Framework analytically intractable in pursuit of what, in many cases, are likely to be *de minimis* environmental benefits and/or other benefits that may be nearly impossible to measure or verify.
4. Relying on non-market-based environmental externality values in a BCA Framework creates the need for an incremental funding source to compensate DER projects that are deemed cost-effective.

These matters are addressed in more detail below.

The primary environmental externalities associated with the electricity system are air emissions from fossil fuel-fired electricity generation. Critically, CO_2 and criteria air pollutants are already subject to market-based, cap-and-trade policies under RGGI and U.S. EPA programs.[28] These market-based programs have two essential features. First, they set aggregate caps on the total level of emissions (*e.g.*, tons of CO_2 per year). For example, RGGI establishes

[28] The U.S. EPA's Cross-State Air Pollution Rule ("CSAPR") and the Acid Rain Program ("ARP") establish emission trading programs for SO_2 and NO_X and regulate New York power plant emissions for both fine particulates and ozone. *See* http://www.epa.gov/airmarkets/index.html.

a cap on total CO_2 emissions from electricity generators in nine states, including New York State. Second, the tradable emission allowances used under cap-and-trade programs create market prices for pollution that are embedded in NYISO wholesale prices. Taking CO_2 as the example, the implication of adopting the BCA White Paper Approach 2 to environmental externality valuation will direct investments toward more costly GHG abatement options without actually providing any environmental benefits beyond what RGGI would deliver.

This argument is illustrated with a simplified example focused on CO_2. The current RGGI CO_2 allowance price is roughly $6.50 per metric ton CO_2.[29] In contrast, the BCA White Paper cites a "central value" for the federal government's societal cost of carbon of $46 per ton when discounted at a 3 percent rate.[30] Assume that the BCA Framework adopts the $46 per ton of avoided CO_2 emissions for DER while all other energy resource decisions face a RGGI-based carbon price of $6.50 per ton.[31] This has several important implications regarding total CO_2 emissions and the cost of achieving reductions. Under any scenario the RGGI program sets the binding cap for aggregate emissions. In addition, the selection of DER based on an above-market valuation of CO_2 will increase the overall cost to New York electric customers without providing any incremental environmental benefits to New York (or the rest of the world) in terms of mitigating global climate change.

The optimal market-based GHG emission reduction policy for the power sector would apply a single carbon price for all relevant economic actors and decisions that would equalize the marginal abatement costs across the sector and thereby constitute a "level playing field" among all options for reducing power sector GHG emissions. Moreover, DER deployed as a result of a

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[29] SNL Energy, "RGGI Secondary Market Prices Back Off After Recent Gains," August 27, 2015.
[30] BCA White Paper, at Appendix C, p. C-2.
[31] The $46 per ton cost of CO_2 equates to roughly a 15 percent rate increase for many of the utilities.

CO_2 valuation that differs from the RGGI market price could undermine the purpose of the RGGI program by sending an economically, inefficient price signal to electricity generators and consumers that is skewed by the artificially high carbon price applied to DER. Similar arguments apply to the other air pollutants subject to market-based cap-and-trade programs.

Statements that the BCA Framework should be sufficient to achieve New York State GHG emission reduction goals[32] and arguments for using non-market-based values for environmental externalities constitute a fundamental misapplication of the BCA Framework. The Joint Utilities do not suggest that the RGGI allowance price accurately reflects the social cost of carbon or that the RGGI program is presently a sufficiently stringent emissions reduction policy to achieve the State's climate change goals. Nonetheless, the BCA Framework should not in and of itself be an environmental policy tool to deliver GHG emission reductions and other environmental benefits.

The BCA Framework should accurately quantify the value that DER provides in terms of compliance with actual environmental policies, such as RGGI. As the example above clearly demonstrates, if the State desires to achieve greater GHG emission reductions from the power sector than what is required under the present RGGI program, the most direct and efficient approach is to work with the other RGGI member states to continue to ratchet down the RGGI emissions cap. As noted above, the reasonableness of such an approach is apparent from the fact that at least six of the nine RGGI states (accounting for roughly 70 percent of power sector emissions covered by the program) have state GHG emission reduction goals comparable to New

[32] Notably, NYSDEC and Acadia Center express the concern that the BCAH will not allow the State Energy Plan to meet its goal of GHG emissions reductions by 2050. *See* NYSDEC Comments, pp. 3-5; *see also* Acadia Center Comments, pp. 3-4.

York State's goal of 80 percent by 2050. As such, the RGGI program is a natural vehicle for achieving New York State's power sector CO_2 emission reduction goals.[33]

Many parties praise RGGI for its success in cost-effectively reducing power sector GHG emissions. Ironically many of the same parties propose to create an "un-level playing field" among DER and other energy resources by establishing widely divergent carbon prices. NRDC, for example, recently explained that RGGI "has helped cut greenhouse gas pollution from power plants by more than 40 percent since it was first implemented in 2005" while "at the same time, the region's economy has grown faster than the rest of the country's, adding thousands of new jobs in fields like energy efficiency and renewable energy, and saving customers hundreds of millions on their energy bills already, with billions more to come."[34] The reality is that New York State is part of a successful market based GHG cap-and-trade program (the first of its kind in the United States) that has served as a model for proposed federal legislation and compliance with the U.S. EPA's Clean Power Program. RGGI is the best vehicle available to address GHG emissions from the power sector, and the RGGI carbon price signal provides an incentive for all power-sector-related carbon abatement investments both upstream in the wholesale market as well as through the deployment of DER.

Some parties suggest that the BCA Framework should take an overly expansive view of externalities related to electricity generation, transmission, and distribution of air pollutants from electricity generation that are presently covered by cap-and-trade programs.[35] This approach is

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[33] *See* http://www.c2es.org/us-states-regions/policy-maps/emissions-targets and the World Resources Institute CAIT Climate Data Explorer, available at http://goo.gl/Lt7z7Q.

[34] *See* http://switchboard.nrdc.org/blogs/jmorris/harnessing_the_energy_to_lead_.html.

[35] *E.g.*, the joint comments of the Alliance for a Green Economy, *et al*. on the Department of Public Service Staff White Paper on Benefit-Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015) ("AGE Comments"), p. 2, would add and quantify avoidance of pollutants such as methane; NYSDEC Comments, pp. 4-6, would add methane, nitrous oxide, and sulfur hexafluoride, as well as land and water impacts; TASC Comments, p.

far beyond the main focus of the BCA White Paper and suffers from multiple drawbacks. First, it ignores the costs of complying with many non-market-based environmental regulations (*e.g.*, air, land, and water regulations) that are already implicitly embedded in wholesale electricity costs such that the avoided wholesale electricity costs that accrue to DER providers already reflect value from avoided air, land, and water impacts. Second, expanding the environmental scope of the BCAH would require substantial analytical complexity and uncertainty to capture benefits that are likely to be relatively small and very difficult to measure and verify (*e.g.*, the suggestion from Sustainable Otsego that the BCAH consider the impacts of DER on formaldehyde in the environment).[36]

The "level playing field" concern applies to the expansive use of environmental externalities in the BCA Framework as well. Effectively subsidizing DER alone for broad, potential environmental benefits will not deliver those benefits at the lowest cost to utility customers because potentially less expensive options for delivering those benefits will fall outside the scope of the BCA Framework and REV.

Lastly, relying on non-market-based environmental externality valuations, like a social cost of carbon, to determine the cost-effectiveness of DER under the BCA Framework would require an incremental source of funding to procure or compensate DER that are deemed cost-effective and will increase electric customer bills. Valuing environmental externalities using an approach other than Approach 1 in the BCA White Paper will tend to find DER options cost-

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16, would include methane losses from the natural gas supply chain for power plants; Comments of the Association for Energy Affordability, Inc. on the Staff White Paper on Benefit-Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015) ("AEA Comments"), p. 10, adds impacts on land and water use and quality; CEC Comments, p. 5, adds the avoidance of other criteria pollutants – volatile organic compounds ("VOCs"), ozone, and particulate matter (PM-2,5 and 10); and Sustainable Otsego Comments on the Benefit-Cost Analysis (BCA) White Paper (August 21, 2015) ("Sustainable Otsego Comments"), pp. 1-2, would also add methane, particulate matter, VOCs, ground-level ozone, formaldehyde, and natural gas hydraulic fracking effects.

[36] Sustainable Otsego Comments, p. 2.

effective when those options do not provide sufficient benefits in the form of net avoided costs that actually flow through utility customer bills to offset the payments required to deploy those DER options. Putting aside the question as to whether this approach would actually deliver any incremental environmental benefits at all, this approach would, in essence, constitute levying a "tax" on electric customers for environmental benefits over and above those already yielded by existing state and federal environmental policies.

D. Valuation of Non-Traditional Costs and Benefits

As noted above, the Joint Utilities maintain that the DCT is the most appropriate BCA test to use within REV. The use of the DCT will moderate increases to customer bills by avoiding the monetization of benefits not related to energy or marginal distribution system costs. The Joint Utilities are concerned with the potential to increase customer bills through the inclusion of non-traditional benefits and agree with the Exelon Companies Comments, which cautions against the "temptation to use 'creative' benefits to support otherwise uneconomic DER projects."[37] One such benefit urged by many parties for the BCA Framework is wholesale market price impacts.[38] The Joint Utilities disagree with this approach and agree with the City of New York and the Exelon Companies which argue that the inclusion of market price impacts "in isolation, is likely to produce inaccurate and unreliable results"[39] and "is highly speculative."[40] The discussion of the market price impacts in the BCA White Paper appears generally consistent

37 Exelon Companies Comments, n. 4, p. 3.

38 AEEI Comments, pp. 14-16; Acadia Center Comments, p. 4; Comments from the Advanced Energy Management Alliance on Staff White Paper on Benefit-Cost Analysis in the Reforming the Energy Vision (August 21, 2015) ("AEMA Comments"), p. 7; TASC Comments, pp. 12 -13; NY-BEST Comments, p. 10; Vote Solar Comments on BCA White Paper on Benefit-Cost Analysis (August 21, 2015), pp. 4-5.

39 City of New York Comments, p. 12.

40 Exelon Companies Comments, p. 16.

with this view.[41] Moreover, the effects of wholesale price suppression could produce unintended consequences including offsetting capacity market impacts.

A few parties also argue for the inclusion of non-traditional benefits such as: (1) health benefits;[42] (2) economic development and job creation;[43] and (3) avoided noise and odor pollution.[44] The Joint Utilities agree that these are worthy goals. However, the subjective quantification of these benefits will result in a system where DER investments are favored above traditional utility investments. While this will result in higher DER adoption, it might also result in negative outcomes such as decreasing electric grid reliability and increasing costs. Additionally, any economic impacts such as job creation that may be associated with DER adoption should be considered holistically and netted with any potential negative economic impacts such as the potential job losses and lower property tax collections that may be associated with reduced reliance on traditional large-scale generation and the negative knock-on effect on overall employment from increases to customer bills required to fund DER.

Another challenge associated with the inclusion of non-traditional benefits, within the BCA Framework, is that the very nature of these benefits makes them difficult and costly to quantify or measure and validate.

The Joint Utilities reiterate that the DCT is the appropriate test for the BCA Framework and that non-traditional benefits should not be included. However, if the Commission directs the inclusion of any non-traditional benefits within the BCA, the Commission should also require

41 BCA White Paper, pp. 19-20.
42 Policy Integrity Comments, p. 11; AGE Comments, pp. 2-3.
43 *Id*.
44 AEEI Comments, p. 13.

that the costs associated with developing and maintaining the required measurement and verification be included within the BCA.

E. Discount Rate

1. The weighted average cost of capital ("WACC") is fully appropriate for the DCT.

There are significant differences among the parties concerning the appropriate discount rate to employ in the BCA.[45] The purpose of the BCA is, as noted earlier, to compare wires and NWA projects. The BCA test that the Joint Utilities support is the DCT because it considers utility transmission and distribution benefits and costs that will be borne directly by customers in transmission and distribution charges under both wires and NWA projects. The benefits realized and costs incurred under this approach are direct utility costs related to the deployment of capital and other direct expenses. As such, the WACC is the only discount rate reflective of the actual cost to each utility and its customers of financing these activities. As such the WACC is fully appropriate as the DCT discount rate.

The Joint Utilities also support the use of the WACC in other BCA test(s) as well. As stated in the BCA White Paper:

> While others have argued that different discount rates should be applied to different metrics (e.g. social discount rates for the societal cost metric, WACC for the utility cost metric), staff proposes that a single discount rate be used for all metrics. This is based on the rationale that, whatever metric is used, a decision is being made on alternative utility expenditure plans, costs that are ultimately collected from ratepayers. Thus, staff's proposal is that the overall discount rate should reflect the opportunity cost of capital for such expenditures.[46]

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[45] *See*, *e.g.*, Policy Integrity Comments, pp. 7-9, and EDF Comments, pp. 4-5, that argue for the societal discount rate; City of New York Comments, p. 3, that argue for the a cost of capital for ratepayers; and Peak Power Comments, p. 4, that supports the WACC as the discount rate for the majority of BCA tests.

[46] BCA White Paper, p. 10.

The use of a lower societal discount rate increases the weight given to benefits and costs over a longer time horizon. This creates two significant problems in the application of the DCT. First, the use of a societal rate in the DCT could pass projects that fail to produce benefits under the DCT at the utilities' opportunity cost of capital (*i.e.*, WACC). These incremental projects will increase utility costs and ultimately rates and bills to customers. The second problem is that the lower societal discount rate gives greater value to benefits that are farther in the future and by definition are more speculative. Both of these considerations support the use of the WACC as the appropriate discount rate for the DCT.

2. Arguments supporting the use of a societal discount rate provide no specific evidence why a low societal rate should be employed to discount future costs and benefits under any BCA test.

The positions taken by the parties supporting the societal discount rate vary. In general it appears that most proponents of this approach recommend a discount rate in the 0 percent to 3 percent range. Some arguments support the use of this lower societal discount rate and are discussed below.

AEEI's Comments supporting the position that investments in DER are less risky than investments in traditional utility solutions[47] is speculative at best. The characteristics and risks of future DER investments are largely unknown as the market and the rules governing it have yet to develop. Thus, there is a high level of uncertainty regarding the performance of investments (the future streams of benefits and costs) in new technologies operating in an as yet undefined and undeveloped market for the specific purpose of meeting the needs of the electric grid which are financed by the utility and its customers. This high level of uncertainty is indicative of greater risk and the use of a greater discount rate than the WACC. Moreover, DER refers to a

[47] AEEI Comments, pp. 10-12.

wide range of technologies, services, and providers; their associated business risks and as a result their cost of capital could vary substantially.

The parties in support of a lower discount rate[48] refer generally to the mathematical fact that the lower societal discount rate produces higher values of long-run avoided costs and benefits for DER than would be realized under a WACC-based approach. However, the parties provide no theoretical underpinning explaining why it is proper to employ the lower rate. Rather, the lower discount rate is favored simply because it produces results that favor DER over traditional solutions because it gives greater weight to longer term impacts. Ultimately, these positions reflect a results-oriented approach that tilts the playing field in favor of DER and provide no reasonable basis for adopting the societal discount rate.

Of the parties supporting the use of a societal discount rate, the most complete explanation comes from NRDC which states:

> NRDC recommends that the utility WACC not be used as the basis for the BCA discount rate. The utility WACC represents the time preference of utility shareholders and bondholders; not the time preference that should be applied to utility resource planning. Utility shareholders and bondholders have their own perspectives regarding opportunity costs, risks, and personal investment goals. In general, they have their own perspectives on the value of short-term versus long-term benefits.
>
> *We recommend that instead the BCA discount rate be based on the time preference that reflects the interests of all utility customers as a whole and is consistent with New York's key regulatory goals. Such a time preference would give higher priority to long-term benefits, and would be lower than the utility WACC. When making electricity resource planning decisions, it is important to recognize that resource decisions made today have implications for customers many years into the future, and that utilities and regulators have a responsibility to ensure that resources chosen today will serve customers' interests well into the future*…[t]he societal discount rate is best able to reflect the value of short- versus long-term costs and benefits to all utility customers (emphasis added).[49]

[48] TASC Comments, pp. 6-9; AEA Comments, pp. 7-8; and CEC Comments, pp. 8-9.
[49] NRDC Comments, p. 17.

The Joint Utilities agree that the discount rate should reflect the "interests of all customers" as well as "key regulatory goals."[50] Further, the Joint Utilities agree that the Commission has the responsibility to assure that "resources chosen today…serve customer's interests well into the future."[51] While the Joint Utilities agree with these key concepts, there is no basis for concluding that the lower societal discount rate is consistent with any of them. The clear implication of NRDC's explanation is that all customers assess investment and consumption decisions based on the expectation that an alternative use of their funds would produce a return to them of between 0 percent and 3 percent. Put another way, NRDC's explanation assumes that the cost of capital for all of the Joint Utilities' customers is between 0 percent and 3 percent. Such a perspective is flawed and should be given no weight.

First, NRDC's view assumes that all commercial and industrial ("C&I") customers have a significantly lower cost of capital than the utilities' WACC. Considering the size and financial integrity of the utilities, as measured by their investment grade bond ratings, there is no basis to conclude that all C&I customers have a cost of capital that is hundreds of basis points less than the WACC. If anything, the fact that utilities' betas, as reported by Value Line, are less than the market average of 1.0 indicates that utilities' risk and resultant cost of capital is somewhat less than what is typical for large corporations.

Second, NRDC's view does not consider the situation facing residential customers. For example, REV has drawn, and seeks to consider,[52] interest in matters impacting low and

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[50] *Id*.

[51] *Id*.

[52] *See* Case 15-E-0822 –Proceeding on Motion of the Commission as to the Policies, Requirements and Conditions for Implementing a Community Net Metering Program, *Notice of Collaborative Meeting Concerning Community Distributed Generation for Low-Income Customers* (issued August 19, 2015),where "Staff is convening a collaborative meeting to investigate and evaluate low-income customer participation in community distributed

moderate income customers who typically have fewer resources. The use of a societal discount rate ignores the fact that many low-to-moderate income customers face more basic investment decisions related to immediate needs such as food, clothing, and housing. The use of a societal discount rate implies that low-to-moderate income customers value investments in these fundamental living requirements as the equivalent of a return of between 0 percent and 3 percent on their limited funds. Such a position is flawed because it simply ignores the consequences of not having food, clothing, or housing.

Third, NRDC's view does not attempt to consider the circumstances of residential customers other than low-to-moderate income. While it is possible that some residential customers with extremely conservative investment strategies could have a marginal cost of capital in the 0 percent to 3 percent range, it is likely that many other residential customers seek higher returns for the use of their moneys. Finally, NRDC's view does not consider the amount of consumer debt that currently exists and the implication that the marginal cost of capital for some customers is likely to be the interest on consumer debt.[53]

Fourth, NRDC's argument that the societal discount rate should be used for electric resource planning contradicts clear industry best practice demonstrating that the utility WACC is the appropriate discount rate to use for comparable electric resource planning. National Grid's affiliate company addressed this point in its recent Electric Grid Modernization proceeding in Massachusetts, where the Massachusetts Department of Public Utilities directed the Massachusetts utilities to use the utility WACC as the discount rate for grid modernization

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generation, including removing potential barriers to their participation and devising possible demonstration projects to encourage broad participation."

[53] *See* http://www.federalreserve.gov/releases/g19/current/

electric resource planning benefit-costs analysis.[54] In that proceeding, National Grid's affiliate utility company explained that a review of similar electric resource planning benefit-cost analyses across eleven utilities spanning nine jurisdictions found only one example where a utility used a societal discount rate and, in that case, the regulator rejected the discount rate as inappropriately low.[55]

The Commission is responsible for assuring that ratepayer moneys are prudently spent. NRDC and others would have the Commission discount future benefits and costs at a societal rate that is lower than the cost of capital for the Joint Utilities' commercial and industrial customers, low-to-moderate income customers, and many residential customers. The end result is the inefficient allocation of customers' capital to investments that will produce unnecessary upward pressure on utility rates and bills. While the WACC may not reflect the marginal cost of capital with complete precision for all customers, it does, as noted in the BCA White Paper,[56] reflect the utility opportunity cost of capital for future investments decisions and has been employed as the standard for the electric utility industry for many years.[57]

F. Sensitivity Analyses

The positions taken by several parties imply the need for a significant amount of sensitivity analyses to test a variety of key assumptions including: (1) power prices,[58] (2) varying levels of DER,[59] (3) customer penetration,[60] (4) locational and service territory load growth,[61] (5)

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[54] Massachusetts Department of Public Utilities, D.P.U. 12-76-C, p. 18.

[55] Comments of Massachusetts Electric Company d/b/a National Grid in Massachusetts Department of Public Utilities Docket No. D.P.U. 12-76, August 22, 2014, pp. 16-17.

[56] BCA White Paper, p. 60.

[57] It is also important to recognize that utilities will be responsible for addressing the risk of shortfalls in DER performance resulting in the need to make further capital investments that will financed at the utility cost of capital.

[58] TASC Comments, p. 11.

[59] Policy Integrity Comments, p. 7.

[60] NRDC Comments, p. 3.

pricing options,[62] (6) regulatory/legal/policy changes,[63] and (7) customer rate and bill impacts.[64] The BCA White Paper states that sensitivity analyses should be performed on "key assumptions" and that the BCAH should contain a "description of the sensitivity analysis…that will be applied to the BCA."[65] The BCA White Paper also suggests that the sensitivity analysis might include a low, medium, and high scenario for costs and benefits.[66]

The Joint Utilities agree that the application of BCA test(s) are likely to require a sensitivity analyses and the initial BCAH will consider the statements in the BCA White Paper as well as the initial comments and reply comments of the parties on this matter. Consistent with the new general principle recommended in the Joint Utilities Initial Comments that "the process for applying and updating the Benefit Cost Analysis Handbooks ("BCAH") should not be costly or administratively burdensome for any party," the use of sensitivity analyses should be limited to those that are practicable and likely to prove informative to decision-making.

V. BCAH DEVELOPMENT MATTERS

Several parties suggest that that the BCAH provide: (1) a transparent look at the formulas and modeling approaches that will be employed to assess alternatives; (2) examples showing how the tests will be applied; and (3) tool sets and protocols for DER providers to assess their proposals.[67] The Joint Utilities are concerned that many parties see the BCAH as a document that not only addresses every possible DER application but also provides the quantitative tools

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[61] NY-BEST Comments, p. 4.
[62] *Id*., p. 6.
[63] *Id*.
[64] AARP/PULP Comments (August 21, 2015), p. 7.
[65] BCA White Paper, p. 9.
[66] *Id*.
[67] AEMA Comments, p. 4; TASC Comments, pp. 4-5; Northeast Clean Heat and Power Initiative Comments on Staff White Paper on the Benefit-Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015), p. 2.

needed to assess each application. Such an approach is not workable given the diversity of potential DER applications that may develop in the future. Rather the Joint Utilities anticipate developing BCAHs that describe the economic tests that will be employed and list key assumptions and inputs that would be used in any BCA analysis. While differences in service territory characteristics may require differences in the content of each BCAH, all assumptions, data, and relevant information will be presented in a useable, transparent, and consistent format for all parties to use for their own purposes. The Joint Utilities also suggest that the BCAHs be updated annually to reflect changes in inputs, the availability of new data, and changes in other input variables as experience is gained and new applications for the BCA Framework emerge. The Joint Utilities continue to support the filing of the initial BCAH concurrent with the filing of the utilities' DSIPs, currently set as June 30, 2016.

Some parties also discussed the process employed to develop the BCAH and recommended a stakeholder engagement collaborative.[68] One party suggests that the handbook should be prepared by a state agency.[69] The Joint Utilities oppose both approaches. While the Joint Utilities will take the comments of all parties into consideration, the development of a handbook for use by utilities in a stakeholder collaborative or by a state agency o would not be efficient because it could not possibly reflect unique service territory considerations affecting each utility. The Joint Utilities anticipate starting work themselves in a timely manner on the BCAH with DCT as the economic test for evaluating wires versus NWA projects. The initial BCAH will reflect both certain quantifiable elements of benefits and costs and identify a path

[68] The Nature Conservancy Comments on the Staff White Paper on Benefit-Cost Analysis in the Reforming the Energy Vision Proceeding (August 21, 2015), p. 10; and NY-BEST Comments, p. 5.
[69] CEC Comments, p. 2.

forward to develop the more difficult-to-quantify benefits and costs for subsequent editions of the BCAH, such as costs and benefits with more locational and temporal granularity.

VI. CONCLUSION

The Joint Utilities respectfully request that the Commission consider the position of the Joint Utilities in their Initial and Reply Comments and act on the BCA White Paper taking into account the concerns set forth above.

Date: September 10, 2015

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nationalgrid

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August 22, 2014

VIA HAND DELIVERY AND E-FILING

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid
D.P.U. 12-76 – Grid Modernization

Dear Secretary Marini:

On behalf of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid (the "Company"), enclosed for filing in D.P.U. 12-76 please the Company's Comments on the Department's Business Case Filing Requirements and Summary Template, and Responses to Briefing Questions, as well as the Company's proposed redlines to the Department's Business Case Filing Requirements document. The Company reserves the right to reply to any comments that others may file.

Thank you for your time and attention to this matter.

Very truly yours,

Melissa G. Liazos

Enclosures

cc: Alison Lackey, Hearing Officer
Sandra Merrick, Office of the Attorney General
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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid	)	D.P.U. 12-76

NATIONAL GRID'S COMMENTS ON THE DEPARTMENT'S BUSINESS CASE FILING REQUIREMENTS AND SUMMARY TEMPLATE, AND RESPONSES TO BRIEFING QUESTIONS

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Submitted: August 22, 2014

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NATIONAL GRID'S COMMENTS ON THE DEPARTMENT'S BUSINESS CASE FILING REQUIREMENTS AND SUMMARY TEMPLATE, AND RESPONSES TO BRIEFING QUESTIONS

I. Introduction and Executive Summary

Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid ("National Grid" or "Company") support the Department's proposal that utilities should conduct a business case analysis of the investments proposed in their Short Term Investment Plans ("STIPs") as part of the their Grid Modernization Plans ("GMPs"). National Grid supports the high-level requirements contained in the Department's proposed Business Case Filing Requirements ("Requirements") and Business Case Summary Template ("Template". A number of items in the Requirements should be clarified, however, in order to better reflect the utilities' planning processes for selecting capital investments and to recognize that estimates of costs and benefits cannot be defined with complete precision when developing a STIP. Costs and benefits necessarily will be subject to change from original estimates over the five year horizon for the STIPs, and the Department's approval of a company's proposed STIP should recognize this and should allow for a range of costs and benefits to be included.

Regarding the recovery of stranded costs, the proposed Requirements suggest that a distribution company "may" be allowed to recognize retirements of stranded assets as extraordinary losses and be allowed to recover the undepreciated balance through amortization.[1] Distribution companies should be allowed to recover the remaining net book value of assets that have been used and useful in providing service to customers but that must be retired prematurely as a result of the Department's requirement to make measurable progress toward its four grid modernization objectives, and to achieve advanced metering functionality within a certain

[1]Requirements at p. 7 n. 9.

timeframe. National Grid has used and useful assets that would remain in service but for the Department's directives on grid modernization (such as AMR meters). Not allowing recovery of and on these assets is a disincentive to pursuing the Department's grid modernization goals, and could result in delays in the implementation of GMPs, or in plans that first replace equipment that is fully depreciated and delay replacement of equipment that has remaining net book value. Approval of a company's STIP and GMP therefore should include approval of a company's proposal for recovery of the undepreciated costs of these assets and carrying charges. Other utility regulators have adopted provisions specifically in the case of advanced meter deployment to allow for a return of and on investments in stranded meters.

Regarding the proposed Template, National Grid appreciates the flexibility in the Department's proposal to allow utilities to include additional types of costs and benefits in their Template. National Grid also urges, however, that the Department not be overly prescriptive by requiring the mandatory application of a pre-defined template, prior to the utilities or the Department having begun to consider in detail the specifics of actual STIPs. The utilities should have the ability to refine the template as they develop their actual STIP proposals and associated business case analyses, in order to better reflect learnings as they go through this process.

In addition, the Template seems to assume that there will be a simple one-to-one or one-to-many correspondence between Grid Mod Objectives, Actions/Impacts, Functionalities, Technologies/Devices/Systems, and Benefits. This is likely to not be the case for a number of investments, however. Further, in some cases a particular benefit is likely to be realized as a result of several grid modernization investments and new operations and maintenance ("O&M") activities working together, without distribution companies being able to apportion the benefit

across different Technologies/Devices/Systems.[2] In order to address this issue the Department should consider re-structuring the Template Benefits section so that the logic of the worksheet flows in the opposite direction, i.e., the Template would first focus on a particular benefit and then define the Functionalities and Technologies/Devices/Systems that would enable that benefit. The Template should allow for a single benefit (with a single present value quantification) to be mapped to multiple Functionalities, Technologies/Devices/Systems, Grid Mod Objectives, and Actions/Impacts.

II. Comments on Business Case Filing Requirements

National Grid supports the Department's proposal that each company's STIP should include a composite business case that illustrates how the STIP investments will achieve measurable progress toward the Department's four grid modernization investments, and that each company must present an overall assessment of whether its business case justifies the proposed investments. National Grid also supports the four primary components of the business case that the Department has identified, i.e.: (1) goals, scope and scale, and drivers for investments; (2) detailed descriptions of the proposed investments, and identification and quantification of all quantifiable benefits and costs associated with the STIP; (3) identification of all difficult to quantify/unquantifiable benefits and costs; and (4) stranded cost analysis. National Grid agrees that, when filling out the Template, distribution companies should have the flexibility to add additional benefits or costs not specifically listed on the Department's Business Case Summary Template, and believes that distribution utilities should have additional flexibility to modify the

[2] This many-to-many mapping of benefits to technologies/functions is evident in Table 4-8 in the Electric Power Research Institute's *Methodological Approach for Estimating the Benefits and Costs of Smart Grid Demonstration Projects*, January 2010.

template based on their learnings during their development of their STIP proposals. National Grid offers some specific comments on each of these four components, below.

A. Goals, Scope and Scale, and Drivers

National Grid is supportive of the Department's proposal that distribution companies should include the reasoning and rationale for their proposed investments. The business case analysis will consider not only the costs and benefits of proposed investments, but also other important factors such as customer bill impacts, safety and impacts on reliability. National Grid will conduct a holistic analysis of its proposed STIP that will consider these other important factors as well.

National Grid suggests that the proposed requirement that the STIP "discuss any alternative investments considered and the rationale for choosing the proposed suite of investments" should refer to a discussion focusing on a utility's planning framework, including the types of investments considered, the process for evaluating those investments, and the criteria for choosing preferred investments. This discussion should be focused on a utility's process for developing its plans, the reasonable alternatives considered, and the screening of those alternatives in order to develop the optimal investment plan. Otherwise, if this requirement is intended to mandate, for example, that a utility discuss every single alternative individual piece of equipment considered, this would be a burdensome and time-consuming review that would not provide meaningful insight into the selection process.

B. Project Descriptions and Analysis of Quantifiable Benefits and Costs

1. Projected Costs: A Range of Projected Costs Should Be Included in the Analysis of Quantifiable Costs.

The Requirements require the Company to provide cost estimates, using vendor quotes whenever possible. National Grid supports the use of vendor quotes where possible, but the

Department should recognize that any vendor quotes used in the development of a GMP, as well as vendor cost estimates during the early stages of implementation of a GMP, are estimates that are subject to change and the companies should not be strictly limited by those preliminary cost estimates. Vendor quotes used for the Requirements will be vendors' preliminary best estimates based on high-level assumptions about anticipated project scope, timing and complexity. These quotes and early conceptual estimates will necessarily be more rudimentary and preliminary than cost estimates available after a project has been fully scoped, requirements documents have been completed, and contracts with vendors are finalized. In addition, later vendor cost estimates and bids will likely vary from preliminary vendor quotes due to such factors as inflation, bids becoming stale due to the passage of time, and competitive RFP processes and possible early strategic bidding by vendors.

Even after obtaining more robust vendor cost estimates subsequent to competitive bidding, negotiations, and contracting, once the Company actually begins to implement its GMP there will necessarily be changes to some of the specifics of the deployment and costs of particular technologies or solutions, for a myriad of reasons. These include challenges encountered in deployment in the field, changes in technology, unforeseen issues that arise with the compatibility or incompatibility of different technologies that must work together, siting and permitting challenges, etc. The time period for implementation of the five year STIP will not even begin to run until after the Department has issued its final orders on the benefit cost analysis and on time varying rates,[3] the distribution companies have filed their GMPs nine months later, and the Department has approved the GMPs, a process which is likely to take a number of years. There will necessarily be less precision in the current estimates of costs (and

[3] D.P.U. 14-04.

benefits) expected to be realized in a five-year STIP (particularly in the later years of the STIP) that covers a timeframe extending substantially more than five years from now.

In addition, costs for grid modernization/Smart Grid technologies in particular can be difficult to estimate for a number of reasons, including:

- Integration of digital technology is an important part of grid modernization, but these technologies have different failure rates and life expectancies than the majority of today's grid technologies, and the resultant failures and replacement rates must be estimated.
- Digital technology has a more rapid obsolescence rate, and changes in related technologies may make system components obsolete or inoperable with respect to the rest of the information and communications technology system well before the end of their lives, so reasonable replacement costs must be estimated.
- Improvements in modern technologies and projected cost decreases will occur at a greater rate than conventional technologies.
- There is uncertainty in performance for some Smart Grid technologies, particularly newer technologies, and if their performance is marginal or decreases over time, they may need to be replaced sooner than expected.
- As technologies mature, their marginal costs have the potential to decline.[4]

In addition, the selection of a particular vendor is based on more than just cost alone. There are other important factors that must be considered including safety, reliability, experience, capability to deliver, etc.

The Department's review and approval of projected costs should recognize these many factors. For all of these reasons the business case analysis should allow for a range of costs (as opposed to one fixed cost) to be included in the projections and in the budgets for STIPs.

[4] Electric Power Research Institute, "Estimating the Costs and Benefits of the Smart Grid: A Preliminary Estimate of the Investment Requirements and the Resulting Benefits of a Fully Functioning Smart Grid: Final Report, March 2011", at 3-4 to 3-5 ("EPRI Report").

2. Projected Benefits.

a. A Range of Benefits and a Focus on Aggregate Savings Should be Included in the Projected Benefits.

National Grid agrees that companies should describe the projected benefits of their STIPs. As with cost estimates, for many benefits it will be appropriate to provide a range for the value of expected benefits, and the companies should be allowed the flexibility to propose a range of values.[5] Many grid modernization investments may rely on factors outside of a distribution company's control in order to achieve expected benefits. For example, changes in customer usage may be necessary to achieve certain benefits. A company may install technologies that enable demand response and/or time varying rates, but customers may or may not choose to participate in these options, and the level of benefits that may materialize from these investments therefore is subject to variability that is outside of a distribution company's control.

In addition, the proper frame of reference for the business case analysis is the effect on customers in aggregate. As such, the analysis of "customer" costs saved as a result of grid modernization investments should be focused on cost savings in the wholesale energy markets and the capacity markets, as well as costs saved in deferred or avoided transmission and distribution ("T&D") investments or lower T&D system O&M costs, which result in lower costs to serve customers. Bill reductions for customers in the aggregate are paid for by these reductions in electric system costs, when aligned appropriately through customers' efforts and the GMP. For example, certain measures associated with grid modernization which customers adopt behind the meter may lead to those customers having lower bills, but absent a reduction in

[5] For example, the EPRI Report provides a range of projected benefits from adopting a Smart Grid. EPRI Report at 4-5, 4-10.

the utility's total cost of providing service (or to the overall costs that are passed through to customers from the wholesale market) there are no net savings for customers or lower customer bills in the aggregate.

In addition, a proposed in the Requirements, National Grid will work with the other utilities to develop the Common Assumptions and Values set forth in Table 1 of the Requirements.

b. Utilities must be allowed to recover the value of undepreciated assets and appropriate carrying charges.

Regarding the proposed Table 2: Common Analysis Methods of the Requirements, although the Department has proposed that the undepreciated value of existing assets that are replaced as a result of the STIP will not be included in the analysis of benefits and costs in a STIP, it is essential that distribution companies be allowed to recover all of the undepreciated value of these assets as well as appropriate carrying charges. The proposed Requirements suggest that a distribution company "may" be allowed to recognize retirements of these assets as extraordinary losses and be allowed to recover the undepreciated balance through amortization.[6] Distribution companies should be allowed to recover the costs for assets that they replace as part of a GMP in order to achieve one or more of the Department's objectives for grid modernization.

Approval of a company's STIP and GMP therefore should include approval of a company's proposal for recovery of the undepreciated costs of these assets and carrying charges. Distribution companies should be allowed to recover the remaining net book value of assets that have been used and useful in providing service to customers but that must be retired prematurely as a result of the Department's requirement to deploy advanced metering functionality ("AMF")

[6] Requirements at p. 7 n. 9.

and associated grid modernization investments within a certain timeframe. Failure to recover a return of and a return on the investments in these prematurely retired assets, which are still used and useful and would only be retired earlier than normal in order to meet the Department's requirements to achieve AMF and progress toward its grid modernization goals, would provide a disincentive for companies to pursue grid modernization. This could result in (1) delays in the implementation of GMPs, (2) longer timelines for the implementation of AMF and progress toward the Department's goals, and (3) plans that first replace equipment that is fully depreciated and delay replacement of equipment that has remaining net book value. Other utility regulators with similar general policies regarding the recovery of costs associated with abandoned plant or early retired assets, such as the California Public Utilities Commission, have adopted provisions specifically in the case of advanced meter deployment to allow for a return of and on investments in stranded meters.[7]

c. Discount Rate.

Table 2 states that the Discount Rate should be the "Weighted average cost of capital and/or 20-year treasury, as appropriate." The WACC is the appropriate discount rate to use for grid modernization investments, not the 20-year treasury rate. The reference to the 20-year treasury rate therefore should be deleted from the Requirements. (Please see the Company's Response to Question 1 of the Department's Briefing Questions in Section V.A of these Comments for further discussion of this issue.)

[7] California Public Utilities Commission Decision 11-05-018, at 55-57 (May 5, 2011) ("Costs can be stranded in a number of different ways, but when they become stranded due to Commission desires or actions that fact should be taken into consideration when determining appropriate ratemaking."; allowing for return on equity investment in retired meters in the case of electromechanical meters prematurely retired due to smart meter rollout).

d. Time Horizon.

Additionally, Table 2 of the Requirements defines the "BCA Time Horizon" as the "projected depreciable life of the technology/asset". National Grid recommends that the definition of the "BCA Time Horizon" be revised to state that "The cumulative benefits and costs from a prospective investment alternative should be evaluated over 15 years, with a terminal value appropriate to the technology under consideration." This was the recommendation that National Grid and the other electric utilities made to the Grid Modernization Benefit-Cost Analysis Working Group.[8] The Requirements should use this definition because the STIP will include investments in assets of different types with a range of projected depreciable lives. As such, the Department should select a single timeframe for analysis that is aligned with the anticipated economic life of advanced meters, which are the focus of the STIP, and that is sufficiently long to capture the STIP investment costs as well as a transition to a relative steady-state of benefits realization since there is likely to be a time lag between when STIP costs are incurred and the full range of projected benefits realized. The Department should balance the need for the timeframe of analysis to sufficiently capture costs and benefits with the increasing uncertainty that a business case analysis faces as the timeframe extends further into the future.

C. Analysis of Unquantifiable Benefits and Costs

National Grid supports the Department's proposal to include an evaluation in the business case of the unquantifiable or difficult to quantify benefits that are expected to result from a STIP. National Grid agrees that, when conducting their analyses, distribution companies should be

[8] D.P.U. 12-76-A, Fitchburg Gas and Electric Light Company d/b/a Unitil, National Grid, NSTAR Electric Company and Western Massachusetts Electric Company, Proposed Global Assumptions filing (May 12, 2014) ("Joint Utility Proposed Global Assumptions").

allowed to identify which benefits of their STIPs are not quantified and how these benefits have factored into the companies' analyses of their STIPs.

D. Stranded Costs

As discussed in Section II.B.2 above, as part of the approval of their STIPs, the Department should approve distribution companies' proposals for how they will recover the costs of stranded assets that they replace as part of their STIPs in order to make measurable progress toward one or more of the Department's four grid modernization objectives.

With regard to the stranded cost information that the companies are to provide in the Template, the Template should also include a time dimension to show when assets will be retired before the end of their useful lives. The companies should also propose amortization schedules and carrying charges for the undepreciated assets so that the Department can rule on cost recovery for such assets at the same time that it issues decisions on STIPs.

III. Comments on Business Case Summary Template

National Grid supports the Department's effort to promote a common analytical framework across the distribution companies. National Grid urges the Department to establish Requirements and a Template that focus on providing guidance to distribution companies regarding the business case benefit-cost analysis without being overly prescriptive and constraining distribution companies through the mandatory and strict application of a pre-defined template. Through more general guidance regarding the necessary approach to and components of a business case analysis the Department can promote a sufficient level of consistency across the distribution companies and ensure that the distribution companies address each element of a benefit-cost analysis that the Department deems necessary. However, requiring strict adherence to a specific template defined prior to either the Department or other stakeholders having begun to consider in detail the specifics of actual STIPs does not acknowledge that the distribution

companies will likely have additional insights into the best set of and definitions for costs and benefits to quantify once they are further along the road of developing their STIPs and the associated business case analyses. National Grid suggests that the Department's filing requirements present the Template as a template that the distribution companies should adopt and refine as appropriate as they develop their STIPs and associated business case analyses.

National Grid supports the Department's recognition that additional categories of costs and benefits may need to be added to the Template when the distribution companies are analyzing the benefits and costs of their proposed STIP investments. This flexibility is important in order to ensure that benefits and costs that may not be foreseen at this time can in fact be included in the analysis if appropriate. National Grid also offers some specific comments on the different elements of the Template, below. These comments are based on National Grid's review of the Template prior to the company's having begun working on its STIP in earnest. As explained above, the distribution companies are likely to find additional improvements or refinements to the Template as they advance their STIPs and begin to work in detail on their business cases, and the Department's filing requirements should specifically grant the distribution companies discretion to refine their application of the Template as long as they follow the general guidelines provided in the filing requirements.

A. Key Definitions

The definition of "non-capitalized incremental O&M expenses" should not be limited to O&M expenses that arise after the grid modernization project is in commission, nor should they be limited to costs that are "re-occurring". Utilities will incur O&M costs related to their STIPs before STIP investments are "in commission" and likely will have related non-recurring costs as

well. This definition should be revised to include O&M cost that occur before an investments is "in commission" and to include non-recurring costs as well.

B. List of Benefits, Functionalities, Technologies

Based on the Template Instructions and the structure of the Template Benefits worksheet, the Template seems to assume that there will be a simple one-to-one or one-to-many correspondence between Grid Mod Objectives, Actions/Impacts, Functionalities, Technologies/Devices/Systems and Benefits. This is likely to not be the case for a number of investments, however. For example, the 'Backhaul Communications System' will likely be mapped to many if not most functionalities, but that technology will not itself deliver any specific benefits; rather it will enable other technologies that do. Moreover, in some cases, a particular benefit is likely to be realized as a result of several grid modernization investments and new O&M activities working together in concert without distribution companies being able to apportion the benefit across different Technologies/Devices/Systems.[9] To ameliorate this potential complication the Department should consider re-structuring the Template Benefits section so that the logic of the worksheet flows in the opposite direction. Specifically, the business case analysis's consideration of benefits would more logically focus on a particular benefit and then define the Functionalities and Technologies/Devices/Systems that would enable that benefit. The Template should allow for a single benefit (with a single present value quantification) to be mapped to multiple Functionalities, Technologies/Devices/Systems, Grid Mod Objectives, and Actions/Impacts.

[9] This many-to-many mapping of benefits to technologies/functions is evident in Table 4-8 in the Electric Power Research Institute's *Methodological Approach for Estimating the Benefits and Costs of Smart Grid Demonstration Projects*, January 2010.

With respect to the list of benefits, "Improved Safety" should be added to the List of Benefits. This is a fundamental element of a utility company's business and is an important benefit to identify. Improved safety will further the Department's grid modernization goal of improved workforce and asset management. In addition, a category for "Other" should be added to the List of Benefits, Functionalities and Technologies (and to the List of Costs), which can be used to specifically list other benefits and costs identified.

There also are several listed benefits which the Department should clarify how they are defined or how they are to be valued, including "More streamlined moving procedures" and avoided greenhouse gas emissions compliance costs.

C. List of Costs

Under the "List of Costs" tab, the assignment of an Action/Impact to discrete costs could be problematic in some cases. For example, advanced meters will have a cost estimate that is not readily disaggregated to different Actions/Impacts, even though the cost of the meters enables many important Grid Modernization Actions/Impacts. In order to address this issue, the Template should allow for a particular Cost/Expense to be mapped to multiple Grid Mod Objectives, Actions/Impacts, Functionalities and Technologies/Devices/Systems.

An "Other" column also should be added to the List of Cost tab, and the Template should state that additional categories can be added. A column should be added to the "Costs" tab of the Summary Template for "Costs to be included in Cap Ex tracker?". Distribution companies can then select "Yes" or "No" in this column.

D. Stranded Costs

Please see National Grid's comments in Section II.B.2, *supra.*

E. Glossary

The definition of "Backhaul Communications Systems" should be revised to reflect that such a system not only can support advanced metering infrastructure, but also likely can be used to support other communications with other systems on the distribution grid (for example, a distribution automation system or a Volt-VAR optimization system. The definition could be revised to state "The infrastructure used to connect the Advanced Metering Infrastructure (AMI) head-end system to the AMI data collectors or access points, and/or used to communicate with other grid modernization technologies."

IV. Responses to Briefing Questions

A. Question 1: Common Analysis Methods – Discount Rate

Question 1: For each type of grid modernization investments, explain whether the 20-year Treasury Rate or the Company's weighted average cost of capital (WACC) would be the appropriate discount rate.

Response: National Grid reiterates its position in the Joint Utility comments to the cost-benefit working group on the appropriate discount rate.[10] In those comments, the Joint Utilities stated that the discount rate to be applied should be the Distribution Company's Weighted Average Cost of Capital ("WACC"), calculated using the Distribution Company's Return on Equity ("ROE"), approved as of the last distribution base rate case, and the year-end capital structure and after-tax weighted average cost of long-term debt from the Distribution Company's most recent FERC Form 1 filing. Because the discount rate includes the impact of the tax shield from using debt, cash flows used in the STIP's business case analysis should include no debt, reflect no interest on debt, and be computed on an after-tax basis. To illustrate the magnitude of the suggested discount rate, National Grid's Preliminary Annual Earnings Report for Year Ended

[10] Joint Utility Proposed Global Assumptions.

December 31, 2013 (submitted to the Department on May 1, 2014 in D.P.U. 09-39) indicates an after-tax WACC of 6.99 percent based on the Company's authorized capital structure and capital costs.[11] The WACC is the rate of return currently used in National Grid's capital expenditure tracking mechanism.[12]

The use of the utility WACC as the discount rate is consistent with the practice of utilities and regulators in other jurisdictions who have previously conducted advanced metering and smart grid benefit-cost analyses. To illustrate this point, the table below shows the discount rates used in the benefit-cost analyses that the Department noted having consulted in preparing its benefit-cost analysis model.[13] The only analysis in the table that used a Treasury Rate for its discount rate was that of Ameren Illinois. However, the Illinois Commerce Commission rejected Ameren's choice of discount rate as "inappropriate."[14]

[11] This calculation is intended only to estimate the magnitude of the company's after-tax WACC and not to propose a specific discount rate for use in the company's business case. This after-tax WACC estimate is based on the authorized capital structure and cost of capital rather than the FERC Form 1 data because the company's FERC Form 1 filing for 2013 is not yet available. The after-tax WACC = [authorized cost of common equity] * [common equity ratio] + [cost of preferred equity] * [preferred equity ratio] + [1 – tax rate] * [long-term debt cost] * [debt ratio] = [10.35%]*[49.99%] + [0.14%]*[4.44%] + [100% – 39.23%]*[5.96%]*[49.87%].
[12] M.D.P.U. No. 1231, Massachusetts Electric Company and Nantucket Electric Company Revenue Decoupling Mechanism, at Sheet 1.
[13] The Department noted these analyses in D.P.U. 12-76, Memorandum regarding the Benefits-Cost Analysis Working Group: Appendix A, March 25, 2014.
[14] Illinois Commerce Commission Order on Rehearing in Docket No. 12-0244, December 5, 2012, at 24. The Illinois Commerce Commission did approve Ameren's advanced metering plan as "cost beneficial," based upon the finding that the NPV for the project remained positive at an 8.2% discount rate.

Benefit-Cost Analysis	**Discount Rate**	**Notes**
Ameren Illinois[15]	3.62%	20-year Treasury Rate[16]
Portland General Electric[17]	5.17%	"cost of capital"[18]
BC Hydro[19]	8.00%	Utility WACC[20]
Baltimore Gas & Electric[21]	8.49%	Utility WACC[22]

Moreover, a recent compilation by Synapse Energy Economics of the discount rates used in evaluating advanced metering and smart grid projects covered an additional seven utilities across five jurisdictions, and found that those discount rates ranged from 6.69 percent to 8.954 percent.[23] This evidence shows that use of a Treasury Rate for the discount rate in grid modernization business case analysis would not be in keeping with industry best practices.

The 20-Treasury Rate is not the appropriate rate to use as the discount rate for grid modernization investments. In 2009, the Department endorsed the use of the 20-year Treasury Rate as the discount rate in updating the Energy Efficiency Guidelines for cost-effectiveness

[15] Ameren Illinois, Advanced Metering Infrastructure (AMI) Cost/Benefit Analysis (June 2012), available at: http://bit.ly/1AXqhS6.
[16] See Section 8.1 General Assumptions of Ameren IL report.
[17] Portland Gas & Electric, PGE Advice No. 07-08, UE 180 PGE Exhibit 800, Direct Testimony of Stephen Hawke, Bruce Carpenter and Alex Tooman, March 7, 2007, available at: http://edocs.puc.state.or.us/efdocs/UAA/ue189uaa142421.pdf.
[18] See Attachment 2 to PGE filing. The filing provides no further details on the discount rate.
[19] BC Hydro, *Smart Metering and Infrastructure Program Business Case* (December 2011), available at: http://1.usa.gov/1r0VJrQ.
[20] The company explains that: "BC Hydro's discount rate (Weighted Average Cost of Capital) for business cases is based on BC Hydro's deemed capital structure, the allowed rate of return on equity—both of which are approved by the British Columbia Utilities Commission—and the forecasted average cost of debt. The Weighted Average Cost of Capital for F2011 is presently set at 8 per cent, and includes a 2 per cent rate of inflation." See Appendix 6 of the BC Hydro report.
[21] Baltimore Gas & Electric, Case No. 9208, Public Service Commission of Maryland, *The Smart Grid Initiative Business Case Advanced Metering and Smart Energy Pricing Program*, July 13, 2009, available at:http://webapp.psc.state.md.us/Intranet/casenum/CaseAction_new.cfm?CaseNumber=9208.
[22] Baltimore Gas & Electric explains that the discount rate reflects its last authorized rate of return.
[23] Direct Testimony of J. Richard Hornby of Synapse Energy Economics on Behalf of the People of the State of Illinois in Illinois Commerce Commission Docket No. 12-0244, August 24, 2012.

tests. The Department arrived at this conclusion based on two arguments, neither of which is applicable here. First, the Department noted that the energy efficiency cost-effectiveness test included customer costs in addition to utility costs, making the utility WACC inappropriate for the discount rate.[24]Second, the Department explained that "energy efficiency expenditures are low-risk investments from the perspectives of both the distribution company and the ratepayers" and that utilities recover energy efficiency expenditures "within the year that they are spent and, thus, there is little risk and few carrying costs associated with these expenditures, unlike the risk and carrying costs that are associated with a distribution company's capital expenditures."[25] Neither of these arguments applies to the STIP business case analysis, which addresses the capital investments (as well as associated capitalized overhead costs and any relevant non-capitalized incremental O&M costs) that utilities will make as part of their grid modernization plans.

The use of the utility WACC for the discount rate in advanced metering and smart grid benefit-cost analyses in fact conforms to best practices for utility resource planning with energy efficiency. These best practices recommend use of the utility WACC (or a higher discount rate reflective of customers' cost of capital) in all cost-benefit tests except when considering very broad societal costs and benefits.[26] Such a broad social perspective is not consistent with the focus of the STIP business cases.

STIP business cases also should not apply different discount rates to different cost or benefit streams, such as those associated with different grid modernization investments. Benefit-cost analysis guidance from the U.S. Environmental Protection Agency explains: "[i]t is

[24] DPU Order in 08-50-A, March 16, 2009, at 21.
[25] *Id.*
[26] See Table 5-3 in *Guide to Resource Planning with Energy Efficiency: A Resource of the National Action Plan for Energy Efficiency*, November 2007.

important that the same discount rate be used for both benefits and costs because nearly any policy can be justified by choosing a sufficiently low discount rate for benefits, by choosing sufficiently high discount rates for costs, or by choosing a sufficiently long time horizon."[27] Any variations in the level of risk or uncertainty related to different cost and benefit streams are best addressed explicitly via sensitivity analyses based on ranges of expected costs and benefits rather than through the use of multiple discount rates within a single business case analysis.[28]

B. Question 2: Double Counting

Question 2: Explain whether the proposed Filing Requirements and Template are adequate to prevent double counting of costs and/or benefits. If not, provided recommendations for how these materials could be modified to address this concern.

Response: As National Grid is conducting its analysis of the costs and benefits of its STIP, it will work to ensure that benefits and costs are not double counted. There may be overlap in the benefits that different technologies provide, and in order for some technologies to provide benefits there may be other technologies that are prerequisites to be installed (e.g., a two-way communication system would need to be installed in order to communicate with AMI meters). The suggestions above regarding the Template Benefits and Costs worksheets will simplify the effort to avoid double counting. Companies should describe in their business cases how they apportioned aggregate projected benefits of a certain type among multiple rows in the Template where they did so, as well as their general approach to avoiding double counting of costs and benefits.

[27] U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses,* Chapter 6: Discounting Future Benefits and Costs, December 2010, at 6-2.
[28] Ringer, Mike, *Discounting Future Fuel Costs at a Social Discount Rate*, California Energy Commission Staff Paper, August 2008, at 12.

C. Question 3: Common Assumptions

Question 3: Explain whether it would be possible to leverage data from any studies in other D.P.U. dockets to calculate any of the common assumptions and corresponding values (e.g., dockets related to energy efficiency plans or long term contracts for renewable energy). Please describe all relevant examples, any challenges to levering such studies for use in GMPs, and whether a new study would instead be required for GMPs.

Response: It may be possible to leverage data from information filed in other D.P.U. dockets. For example, the 2013 Avoided Energy Supply Costs Study ("AESC 2013") could provide some guidance in terms of forecasts for energy prices, demand prices, demand reduction induced price effects ("DRIPE"), and the forecast of Renewable Energy Certificate ("REC") costs, although the results from the AESC 2013 or any other such studies would need to be updated to reflect the current wholesale markets and other current circumstances. The data and analysis from the AESC 2013 must be approached with caution, however, for the purposes of the STIP business case analyses. As the AESC 2013 report explains:

> [The AESC 2013] provides projections of marginal energy supply costs that will be avoided due to reductions in the use of electricity, natural gas, and other fuels resulting from energy efficiency programs offered to customers throughout New England. In order to determine the value of efficiency programs, AESC 2013 provides projections of avoided costs of electricity and natural gas in each New England state for a hypothetical future, the "Base Case," in which no new energy efficiency programs are implemented in New England from 2014 onward. [T]he projections . . . thus do not reflect the actual market conditions and prices likely to prevail in New England in an actual future with significant amounts of new efficiency measures.[29]

As indicated above, a critical consideration regarding the AESC 2013 is that the Report's estimates of avoided costs from energy savings and peak demand reductions are measured against the wrong baseline for purposes of the STIP business case analysis—i.e., a hypothetical

[29] Synapse Energy Economics, *Avoided Energy Supply Costs in New England: 2013 Report*, Prepared for the Avoided-Energy-Supply-Component (AESC) Study Group, July 12, 2013, at 1-1.

forecast of energy market factors that assumes no new Massachusetts or other New England energy efficiency efforts. In contrast, a business case analysis should measure the benefits and costs of a STIP against a baseline that does reflect the energy efficiency and other energy programs (e.g., solar incentives) expected to be in place during the timeframe for the analysis, and many of these energy efficiency and other programs will be incremental to those assumed in the AESC 2013 "Base Case." Any analysis of benefits from grid modernization will have to consider the impacts from these programs first before determining the incremental benefit from grid modernization efforts. Further in-depth evaluation of existing studies will be required to determine the extent to which utilities could use studies like AESC 2013 as a starting point for STIP business case analyses.

Additionally, it may be possible to leverage data from the analyses conducted for long-term contracts pursuant to Section 83A, though again any such data like would need to be updated to reflect current circumstances.

D. Question 4: Granularity of Data

Question 4: Describe the level of granularity that would be appropriate for GMP filings in terms of quantified costs and benefits. Please provide examples.

Response: It is likely that the distribution companies will be able to quantify different costs and benefits to varying levels of granularity in their supporting work papers for the Template. Certain benefits and costs will be amenable to more detailed analyses whereas others will more high-level assumptions and inputs; for example, this may be the case for benefits that depend in large part on customer uptake of technologies or participation in new rate designs. Requiring a high degree of granularity in the business case is likely to suggest a false sense of precision for certain benefits and costs whose quantification is necessarily uncertain. The Template and any supporting business case narrative document should present sufficient granularity to allow the

Department and other stakeholders to evaluate the distribution companies' STIPs without overwhelming parties with excessive detail. To the extent that particular costs or benefits necessitate additional inquiry into their specific calculations, the distribution companies can provide additional information regarding the relevant aspects of their business case analyses at the Department's request. Annual estimates of costs and benefits, for example, are likely sufficiently granular to support business case evaluation.

E. Question 5: Unquantifiable Benefits

Question 5: Does the Department need to provide any additional guidance on the assessment or ranking of unquantifiable benefits to ensure that all companies evaluate these benefits in a similar manner? If so, provide suggestions as to what such guidance might entail.

Response: National Grid does not believe that additional guidance on the assessment or ranking of unquantifiable benefits is needed. Each distribution company has a different existing distribution system, and each company is likely to make different proposals in their STIPs that will create different benefits, within the context of the systems from which they are starting. Each company will assess what the relative benefits will be for their customers in their STIPs, and their proposed STIPs will have to be evaluated in this light.

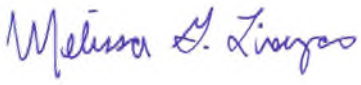
V. Conclusion

National Grid appreciates the opportunity to comment on the proposed Requirements and Template, and looks forward to the Department's final order on the business case analysis for the distribution companies' proposed STIPs. National Grid also reserves the right to reply to comments filed by others on these matters.

Respectfully submitted,

Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid

By their attorney,



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Dated: August 22, 2014

Grid Modernization Business Case Filing Requirements

I. INTRODUCTION AND PURPOSE OF BUSINESS CASE

This document provides guidance on the business case that an electric distribution company must file as part of its grid modernization plan ("GMP"). See Modernization of the Electric Grid, D.P.U. 12-76-B at 15-17. The business case will be a central component of each company's short-term investment plan ("STIP"), which addresses the capital investments a company proposes to make over the first five years of the GMP. The business case will serve as the vehicle by which the Department and other parties will evaluate whether the benefits, both quantified and unquantified, justify the costs of the proposed STIP investments. In order to enable evaluation of all appropriate benefits and costs associated with a STIP, the business case should include capitalized overhead costs, as well as any non-capitalized incremental operations and maintenance ("O&M") costs that are integral to implementation of the STIP and achievement of its benefits.[1] We reiterate our conclusion in D.P.U. 12-76-B that these non-capitalized O&M costs are not eligible for pre-authorization or cost recovery through a capital expenditure tracker, but emphasize that such costs should be considered in the business case analysis.

II. BUSINESS CASE FILING REQUIREMENTS

A. Summary

Each company's STIP must include one composite business case that illustrates how the STIP investments will achieve measurable progress towards the Department's four grid

[1] An example of such non-capitalized incremental O&M costs are incremental O&M costs related to marketing, education, and outreach with respect to time varying rate programs. See D.P.U. 12-76-B at 23-25; Time Varying Rates, D.P.U. 14-04-B, at 17-18 (June 12, 2014).

modernization objectives. The business case will include four primary components, each discussed in more detail below. Additionally, each company must present an overall assessment of whether its business case justifies the proposed investments.[2] The four primary components of the business case are as follows:

1. Goals, scope and scale, drivers for investments;
2. Detailed descriptions of the proposed investments, and identification and quantification of all quantifiable benefits and costs associated with the STIP;
3. Identification of all difficult to quantify/unquantifiable benefits and costs; and
4. Stranded cost analysis.

In addition, the companies must complete the Business Case Summary Template ("Template"), attached, which includes summary information and analysis regarding quantifiable and unquantifiable benefits and costs as well as analysis of stranded costs. Distribution companies may add additional benefits and costs to the proposed template, and may adapt the template based on their learnings as they develop their STIP proposals.

B. Goals, Scope and Scale, and Drivers

This section will include a clear statement of a distribution company's reasoning and rationale for its proposed STIP investments. Each company must: (1) identify the technology solutions considered and selected; (2) describe how the STIP proposal will achieve measureable progress in meeting the Department's grid modernization objectives, including advanced metering functionality, while also enabling the achievement of state and Department policy objectives; (3) provide information on the scope and scale of the technology proposed;

[2] As discussed in D.P.U. 12-76-B, a company may also propose an alternative STIP with a corresponding business case if the benefits of implementing advanced metering functionality within five years do not justify the costs. D.P.U. 12-76-B at 17.

and (4) discuss any alternative investments considered and the rationale for choosing the proposed suite of investments.

C. Project Descriptions and Analysis of Quantifiable Benefits and Costs

As part of the business case, companies must provide an explanation of and background material for all components of the STIP, including a detailed description of all proposed investments and a deployment schedule. This section should also include an itemization and analysis of all quantifiable costs and benefits.

1. Projected Costs

For all STIP investment categories, a company must provide cost estimates, using vendor quotes wherever possible. Also, a company must identify any incremental STIP capital investments for which it plans to seek cost recovery in a later capital expenditure tracker proceeding.[3] When calculating costs, the companies must include all costs related to proposed capital investments, including capitalized overhead costs, as well as any appropriate incremental, non-capitalized O&M costs. It is not expected that each company will use every cost category contained in the Template. The companies should provide all costs within the format set forth in the Template, and provide supporting documentation to justify all cost estimates.[4] Companies may provide a range of costs where appropriate, and may list additional categories of costs where necessary.

[3] In D.P.U. 12-76-B at 18, the Department describes its use of "incremental."

[4] All information provided within the Template must be presented in active spreadsheets to permit the Department and other parties to fully review calculations, assumptions, scenarios, sensitivities, etc.

2. Projected Benefits

Each company must describe and provide documentation supporting the quantifiable benefits of its proposed STIP investments. This description must identify the beneficiaries of the investment using the categories defined in the Template, as well as include descriptions of the actions that are necessary to achieve the benefits. As with costs, this analysis should include only benefits that are incremental to current investments. Companies may include a range of expected benefits, where appropriate, as well as provide additional benefit categories if necessary.

The companies must identify all benefit categories to which they are ascribing quantifiable benefits within the format set forth in the Template. It is not expected the each company will use every benefit category contained in the Template. In calculating quantifiable benefits and costs, the companies must use common assumptions where possible. Specifically, the companies must jointly develop the assumptions and values set forth in Table 1 below.[5] For any company-specific assumptions and values used, the company should provide a description of the method used to calculate those benefits (and/or costs) and any source(s) it relied upon to make the assumption.

[5] As necessary, the companies may jointly conduct a study or leverage a similar effort to develop these assumptions and values in a transparent manner.

Table 1: Common Assumptions and Values
• Rate of Inflation
• Energy forecast (kWh)
• Demand forecast (kW)
• Forecast of energy prices
• Forecast of capacity prices
• Forecast of demand reduction induced price effects[6]
• Forecast of Renewable Energy Certificate ("REC") costs

The Department recognizes that the values upon which a company relies in its analyses will vary due to factors such as each company's cost structure and the specific STIP investments proposed. However, the companies must use a standard method, across all companies, regarding each of the following:

Table 2: Common Analysis Methods	
Treatment of Stranded Costs	The analysis of benefits and costs included in a STIP (i.e., as reflected in the Benefit and Cost tabs in the Template) will apply only to the benefits and costs that are incremental to existing plant, i.e., are related to the new STIP investments. The undepreciated value of existing assets will not be included in this analysis. However, this residual asset value of the investment not included in the analysis of benefits and costs will be presented as part of the overall business case.
Discount Rate	Weighted average cost of capital ~~and/or 20 year treasury, as appropriate~~
BCA Time Horizon	The cumulative benefits and costs from a prospective investment alternative should be evaluated over 15 years, with a terminal value appropriate to the technology under consideration. ~~Projected depreciable life of the technology/asset~~

[6] Demand reduction induced price effects refer to the changes in prices in the wholesale markets for capacity and energy resulting from the reduction in quantities of capacity and energy required from those markets due to the impact of electric and capacity reductions. This is also referred to as "market price suppression." See, e.g. Rick Hornby et al., Avoided Energy Supply Costs in New England: 2013 Report at 1-18 (Synapse Energy Economics, Inc. July 12, 2013), available at http://www.synapse-energy.com/Downloads/SynapseReport.2013-07.AESC.AESC-2013.13-029-Report.pdf; Massachusetts Electric Company and Nantucket Electric Company, D.P.U. 10-54, at 108-133 (2010).

Sensitivity Analyses	Each company must include sensitivity analyses for a limited set of variables in order to arrive at a reasonable range of quantifiable benefits and/or costs. Variables that are best suited for a sensitivity analysis are those for which a small change in an assumption can lead to a large change in the resulting output of a calculation. In addition, benefit categories that comprise a significant component of costs or benefits and the magnitude of which are difficult to predict could be well suited to a sensitivity analysis.

All quantifiable costs and benefits should be summed and reported in present value terms using the discount rate discussed above.

D. Analysis of Unquantifiable Benefits and Costs

Each company's business case must evaluate the full range of benefits that result from its investment plan. The Department recognizes that many of these benefits may be either difficult to quantify or unquantifiable. In particular, we note that many benefits from grid modernization that will accrue directly to ratepayers are difficult to quantify. In addition, as discussed in D.P.U. 12-76-B at 9, the Department sees grid modernization as an important means for advancing state policy goals and statutory requirements, and expects the companies to consider this benefit in their business case analysis.[7] All such benefits must be fully described in the business case supporting the proposed STIP investments. Difficulty in

[7] See, e.g., 225 C.M.R. § 14.00 (Renewable Portfolio Standard, which promotes renewable energy and implements state goal to interconnect 1,600 MW of solar generation by 2020); An Act Relative to Green Communities, St. 2008, c. 169 (statewide energy efficiency and demand response goals); An Act Establishing the Global Warming Solutions Act ("GWSA"), St. 2008, c. 298, codified as G.L. c. 21N, § 3 (greenhouse gas emissions reduction requirements); Executive Office of Energy and Environmental Affairs, Global Warming Solutions Act 5-Year Progress Report at 47 (December 30, 2013); the Department's service quality and emergency response standards; and the Department's distributed generation interconnection standards. We expect companies to describe how they took into account the benefits of meeting state policy goals in developing their STIP proposals.

quantifying a benefit does not lessen its significance relative to more easily quantifiable benefits. Within the Template, each company must define the benefit categories that the company considers in the business case but is unable to quantify. Each company must demonstrate how it factors these benefits into its overall analysis of its proposed STIP investments.

Difficult to quantify benefits will likely include benefit categories for which there is a quantifiable impact on either a distribution company or its customers, but the monetary value of the impact is unknown at this time (e.g., reliability improvements). In these instances companies must quantify the impact to the best of their ability, but are not required to quantify the monetary value of that impact.

In its analysis of unquantifiable benefits, a company must identify both the benefit category and the entity or entities to which the benefit will accrue. Each company must provide an analysis of the weight (e.g. low, medium, high) that it attributes to each unquantifiable benefit included within the Template,[8] as well as a narrative explanation of its analysis, including supporting documentation whenever possible. Further, a company should provide some discussion of how its assessment of difficult to quantify or unquantifiable benefits impacted evaluation of other potential investments that it did not ultimately propose in its STIP.

E. Stranded Costs

In assessing the costs and benefits of new investments contained in the STIP (i.e., as reflected in the Benefits and Costs tabs in the Template), a company may not include stranded

[8] This is reflected in columns M and N in the Benefits tab in the Template, which address relevance to state policy goals and impact on grid modernization objectives.

costs of existing or historic capital equipment that the company proposes to replace before that equipment is fully depreciated because these are not costs or benefits associated with new investments. However, the Department recognizes that the magnitude of stranded costs may inform a company's business case and the timing of proposed investments, and that companies will need a way to recover these costs. Therefore, companies must include an analysis of the undepreciated costs associated with existing/historic capital equipment that the company proposes to replace as a result of its proposed STIP investments.[9]

Each company must provide the required data in the Stranded Cost tab of the Template in analyzing the financial implications of any stranded asset. Each company must provide an analysis of its proposed treatment for each stranded asset including any undepreciated costs to be recovered, proposed amortization period, rate of return and carrying charges (existing and future) that it expects would apply. We expect each company to provide a narrative regarding how the estimated stranded costs impact the overall business case. Approval of a company's STIP and GMP will include approval of a company's proposal for recovery of the undepreciated costs of stranded assets and carrying charges.

[9] If a utility retires plant before the end of its useful life the Department may recognize the retirement as an extraordinary loss and allow recovery of the undepreciated balance through amortization. Milford Water Company, D.P.U. 12-86, at 88-92 (2013) (retired water treatment facilities); Bay State Gas Company, D.T.E. 05-27, at 197-200 (2005) (discontinued meter reading technology); Hutchinson Water Company, D.P.U. 85-194, at 11 (1986) (prematurely abandoned well and fire hydrants). See also Fitchburg Gas and Electric Light Company, D.P.U. 19084, at 10-12 (1977) (finding that retired generating plant was abnormal retirement warranting the use of abandoned property accounting), aff'd, Fitchburg Gas and Electric Light Company v. Department of Public Utilities, 375 Mass. 571 (1978). Companies should only seek such treatment for extraordinary losses consistent with the Department's ratemaking practice.

THE COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid Grid Modernization	)	D.P.U. 12-76

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused to be served the foregoing document in the above-referenced docket upon all parties of record in this proceeding in accordance with the requirements of 220 C.M.R. 1.05 (Department's Rules of Practice and Procedure), by hand delivery and/or E-Filing.

MASSACHUSETTS ELECTRIC COMPANY and
NANTUCKET ELECTRIC COMPANY
each d/b/a NATIONAL GRID

Melissa G. Liazos
National Grid
40 Sylvan Road
Waltham, MA 02451
Phone: (781) 907-2108
Email: melissa.liazos@nationalgrid.com

Date: August 22, 2014

Division 5-4

Request:

For each benefit-cost analysis included in the rate case filing, please use a discount rate equal to the discount rate that is currently used for modeling the cost-effectiveness of the Company's energy efficiency programs. Please provide all workpapers, workbooks, and calculations in machine-readable format with formulas intact.

Response:

The Company did not re-run the benefit-cost analyses included in its rate case filing using the discount rate that is currently used for modeling the cost-effectiveness of energy efficiency programs, as the use of such an alternative discount rate will produce misleading results. Please refer to the Company's response to Division 5-3 for an explanation of why the Company's weighted average cost of capital is the appropriate discount rate for estimating the net present value of the proposed Power Sector Transformation investments.

(This response is identical to the Company's response to Division 1-4 in Docket No. 4780).

Division 5-5

Request:

With regard to PST Book 1, Appendix 2.2 on Economic Development, please provide all documentation, workbooks, and workpapers used for this analysis, in machine-readable format with formulas intact.

Response:

Please see Attachment DIV 5-5 for documentation, workbooks, and workpapers used to develop the economic development analysis described in Appendix 2.2 of the Company's Power Sector Transformation Plan.[1]

Each tab in Attachment DIV 5-5 shows the allocation of proposed project investment spending to Regional Economic Models, Incorporated (REMI) inputs along with the REMI model results for each of the Company's proposed investments, which are described in Chapters 5 through 8 of the Power Sector Transformation Plan. The tab entitled "Table" in the attached Excel file summarizes the REMI model inputs and results for all proposed investments.

(This response is identical to the Company's response to Division 1-5 in Docket No. 4780.)

[1] Please see PST Book 1, Schedule PST-1, Appendix 2.2.

Company-owned Solar

Cost Assumptions

Category	System Size 250	500	1500 Total	Source	Comments
System Count	1	1	1	3	
Lifecycle Capital Cost	1,326,656.00	2,541,813.75	5,174,853.75	9,043,323.50	Solar and Storage RI Numbers. Provided by Jim Perkinson
Lease Charge	8,750.00	15,000.00	45,000.00	68,750.00	Solar and Storage RI Numbers. Provided by Jim Perkinson
Annual Operating Expense	13,625.00	40,875.00	122,025.00	491,300.00	Solar and Storage RI Numbers. Provided by Jim Perkinson
	1,349,031.00	2,597,688.75	5,341,878.75	9,603,373.50	

	$ 9,043,323.50
	$ 101,250.00
	$ 176,525.00

Assumption	Unit	Source	Comments	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	Total
Solar Systems Installed			Install 1 system per year based on NG RI Rate I	1	1	1																		
Solar Systems Operating				1	2	3	3	3	3	3	3	3	3	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	
Capital Expenditures			Capex to purchase and install soalr systems	$ 1,326,656.00	$ 2,541,813.75	$ 5,174,853.75	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Inverter Lease Charge			Lease Charges	$ 8,750.00	$ 23,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	$ 68,750.00	1,270,000.00
Operating Expenditures			Annual O&M	$ 13,625.00	$ 40,875.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	$ 122,025.00	2,250,950.00
				$ 1,349,031.00	$ 2,606,438.75	$ 5,365,628.75																		
						$ 9,321,098.50																		
				$ 1,349,031.00	$ 2,606,438.75	$ 5,365,628.75	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$ 190,775.00	$12,564,274
																								3,520,950.00
Forward Commitment Capacity Value																								

Total nominal cost through 2037

Economic development impact of Company-Owned Solar

REMI Inputs (Assumes labor 50% of cost) - $	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	Total 2018-2037
Exogenous Final Demand - Construction	331,664	635,453	1,293,713																		$2,260,831
Detailed Industry Sales - Power line and structures Construction	331,664	635,453	1,293,713																		$2,260,831
Professional Services	66,333	127,091	258,743																		$452,166
Utility O&M	13,625	40,875	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	122,025	$2,250,950
Inverter Lease Charge (Not Included)	$8,750	$23,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$68,750	$1,270,000
Total	$752,036	$1,462,623	$3,036,945	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$190,775	$8,494,778

$8,494,778 Nominal local costs through 2037, assumes 50% of

REMI Results	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2018-2037
RI GDP ($m)	$0.7	$1.5	$3.2	$0.5	$0.3	$0.2	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$8.2
Jobs created	8	16	31	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
Personal Income ($m)	$0.5	$1.0	$2.1	$0.4	$0.3	$0.2	$0.2	$0.2	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$6.3
State and Local Tax Revenue ($m)	$0.1	$0.1	$0.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.7

Jobs/$mill
5.0
0.063
0.112
installation costs are labor

	2018	2019	2020	2021	2022	2023	2024	Sum
Labor	$ 743,286	$ 1,438,873	$ 2,968,195	$ 122,025	$ 122,025	$ 122,025	$ 122,025	$ 5,638,453
Materials	$ 420,372	$ 1,167,566	$ 2,397,434	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ 4,260,372
Total	$ 840,744	$ 2,606,439	$ 5,365,629	$ 190,775	$ 190,775	$ 190,775	$ 190,775	$ 9,898,825
								$ 9,575,911

Employment Breakdown	2018	2019	2020	2021	Sum	
Direct	5	10	19	1	35	61%
Indirect	1	2	4	0	7	12%
Induced	2	4	8	1	15	26%
Total	8	16	31	2	57	100%
	8	16	31	2	57	
Intermediate Demand Employment	1	2	4	0	7	
Local Consumption Demand Employment	1	3	5	0	10	
Government Demand Employment	0	0	0	0	0	
Investment Activity Demand Employment	1	1	3	1	6	
Exports to Multiregions Employment	0	0	0	0	0	
Exports to Rest of Nation Employment	0	0	0	0	0	
Exports to Rest of World Employment	0	0	0	0	0	
Total	2	4	8	1	15	
					15	
Direct Industry Employment						
Exogenous Industry Sales Employment	2	4	8	0	15	
Exogenous Industry Demand Employment	3	5	10	0	17	
Total	5	9	18	0	32	
					32	

GDP Breakdown	2018	2019	2020	2021	Sum	
Direct	$0.5	$0.9	$2.0	$0.2	$3.6	6%
Indirect	$0.1	$0.2	$0.4	$0.1	$0.7	1%
Induced	$0.2	$0.4	$0.8	$0.2	$1.6	3%
Total	$0.7	$1.5	$3.2	$0.5	$6.0	10%
					$6.0	

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Company-owned Storage

Cost Assumptions

	System Size (MW)				
System Information	**500**	**750**	**Total**	**Source**	**Comments**
System Count	1	1	2		
Lifecycle Capital Cost	$ 894,375.00	$ 1,341,562.50	2,235,937.50	Solar and Storage RI Numbers. Provided by Jim Perkinson	
Annual Lease Charge	$ 5,000.00	$ 7,500.00	12,500.00	Solar and Storage RI Numbers. Provided by Jim Perkinson	
Annual Operating Expense	$ 11,500.00	$ 28,750.00	229,200.00	Solar and Storage RI Numbers. Provided by Jim Perkinson	
Annual Lost Revenue			241,700.00		Should this be included?
Incentives					Are there any incentives?

Assumption	**Unit**	**Source**	**Comments**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total 2018-2029**
Solar Systems Installed			Install 1 system per year based on NG RI Rate Case dec	1	1											
Solar Systems Operating				1	2											
Capital Expenditures				$ 894,375.00	$ 1,341,562.50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,235,937.50
Inverter Lease Charge				$ 5,000.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 12,500.00	$ 142,500.00
Operating Expenditures				$ 11,500.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 28,750.00	$ 327,750.00
				$ 910,875.00	$ 1,382,812.50	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	$ 41,250.00	**$ 2,706,187.50**
															$	2,706,187.50

Economic development impact of Company-Owned Storage

REMI Inputs (Assumes labor 50% of cost)- $	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total 2018-2037**
Exogenous Final Demand - Construction	223,594	335,391	0	0	0	0	0	0	0	0	0	0	$ 558,984.38
Detailed Industry Sales - Power line and structures Construction	223,594	335,391	0	0	0	0	0	0	0	0	0	0	$ 558,984.38
Professional Services	44,719	67,078	0	0	0	0	0	0	0	0	0	0	$ 111,796.88
Utility O&M	11,500	28,750	28,750	28,750	28,750	28,750	28,750	28,750	28,750	28,750	28,750	28,750	$ 327,750.00
Inverter Lease Charge (Not Included)	$5,000	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$12,500	$ 142,500.00
Total	$508,406	$779,109	$41,250	$41,250	$41,250	$41,250	$41,250	$41,250	$41,250	$41,250	$41,250	$41,250	**$ 1,700,015.63**
													$ 1,700,015.63

Nominal local costs through 2037, assumes 50% of installation costs are labor

REMI Results	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2018-2037**	
RI GDP ($m)	$0.5	$0.8	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$ 1.72	Jobs/$mill
Jobs created	6	8	1	0	0	0	0	0	0	0	0	0	$ 15	5.5
Personal Income ($m)	$0.3	$0.5	$0.1	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$ 1.3	
State and Local Tax Revenue ($m)	$0.04	$0.06	$0.01	$0.01	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$ 0.15	

	0.063	0.112

	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Sum**
Labor	$ 503,406	$ 766,609	$ 28,750	$ 28,750	$ 28,750	$ 28,750	$ 28,750	$ 1,413,766
Materials	$ 407,469	$ 616,203	$ 12,500	$ 12,500	$ 12,500	$ 12,500	$ 12,500	$ 1,086,172
Total	$ 910,875	$ 1,382,813	$ 41,250	$ 41,250	$ 41,250	$ 41,250	$ 41,250	$ 2,499,938
							$	2,499,938

Employment Breakdown	**2018**	**2019**	**2020**	**2021**	**Sum**	
Direct	3	5	0	0	9	61%
Indirect	1	1	0	0	2	12%
Induced	1	2	0	0	4	27%
Total	6	8	1	0	15	100%
	6	8	1	0	15	
Intermediate Demand Employment	1	1	0	0	2	
Local Consumption Demand Employment	1	1	0	0	3	
Government Demand Employment	0	0	0	0	0	
Investment Activity Demand Employment	0	1	0	0	2	
Exports to Multiregions Employment	0	0	0	0	0	
Exports to Rest of Nation Employment	0	0	0	0	0	
Exports to Rest of World Employment	0	0	0	0	0	
Total	1	2	0	0	4	
					4	
Direct Industry Employment						
Exogenous Industry Sales Employment	2	2	0	0	4	
Exogenous Industry Demand Employment	2	3	0	0	4	
Total	3	5	0	0	8	

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Electric Vehicles

Cost Assumptions

Assumption	Unit	Source	Labor/Materials	2018	2019	2020	Total
Capital Expenditures	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	**TOTAL**	$ 988,470.41	$ 1,828,500.93	$ 4,326,511.08	**$ 7,143,482**
EDC Costs (New Service)	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	50/50	$ 147,899.09	$ 369,747.72	$ 961,344.07	
Customer Premise Costs	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	50/50	$ 352,617.06	$ 881,542.66	$ 2,292,010.90	
EVSE Costs	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	50/50	$ 122,633.25	$ 306,583.13	$ 797,116.13	
Project Management Office (PMO) Labor	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 265,321.01	$ 270,627.43	$ 276,039.98	
Project Management / CRM Tool Modifications	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 50,000.00			
Data Analysis & Reporting Tools	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 50,000.00			
Operating Expenditures (O&M)	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	**TOTAL**	$ 388,843.01	$ 540,362.27	$ 1,008,319.92	**$ 1,937,525**
Station O&M	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 labor	$ 10,780.00	$ 37,730.00	$ 107,800.00	
Account Managers	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 170,963.01	$ 174,382.27	$ 177,869.92	
Charging Program Marketing	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 113,000.00	$ 93,000.00	$ 111,000.00	
Site Agreement Contracting Costs	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 9,600.00	$ 24,000.00	$ 62,400.00	
Customer Site Cost Estimation	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 12,000.00	$ 30,000.00	$ 78,000.00	
EVSE Rebate Cost for Make-Ready Sites	$ USD	Transportation Initiative - Draft Testimony (Karsten Barde)	100 Labor	$ 72,500.00	$ 181,250.00	$ 471,250.00	
				$ 1,377,313.42	$ 2,368,863.20	$ 5,334,831.00	**$ 9,081,008**
							$ 9,081,007.63

By Labor/Materials we mean the split that will be spent primarily on labor to install the stations versus the amount spent on EVSE to be installed. The labor portion would be money spent on contractors and consultants, construction firms, etc. and they would have their own materials and supply chain impacts. The portion spent on EVSE would be excluded from the analysis because it is assumed ESVE demand is met by suppliers outside of Rhode Island

Economic development impact of EVSE installation

REMI Inputs (Assumes labor 50% of cost) - $	2018	2019	2020	Total
Exogenous Final Demand - Construction	402905	846594	2094246	$ 3,343,744
Detailed Industry Sales - Power line and structures Construction	402905	846594	2094246	$ 3,343,744
Professional Services	378063	502632	900520	$ 1,781,215
Utility O&M	10780	37730	107800	$ 156,310
Total	$ 1,194,653	$ 2,233,549	$ 5,196,811	**$ 8,625,013**
				$ 8,625,013

REMI Results	2018	2019	2020	Total	
RI GDP ($m)	$1.114	$2.263	$5.369	$8.746	Jobs/$mill
Jobs created	12	23	53	89	9.8
Personal Income ($m)	$0.727	$1.483	$3.616	$5.826	
State and Local Tax Revenue ($m)	$0.081	$0.166	$0.405	$0.653	

						0.063	0.112

Employment Breakdown	2018	2019	2020	Sum	
Direct	8	14	33	55	62%
Indirect	2	3	7	11	13%
Induced	3	6	14	22	25%
Total	12	23	53	89	100%
	12	23	53	89	
Intermediate Demand Employment	2	3	7	11	
Local Consumption Demand Employment	2	4	9	15	
Government Demand Employment	0	0	0	0	
Investment Activity Demand Employment	1	2	4	7	
Exports to Multiregions Employment	0	0	0	0	
Exports to Rest of Nation Employment	0	0	0	0	
Exports to Rest of World Employment	0	0	0	0	
Total	3	6	14	22	
				22	
Direct Industry Employment					
Exogenous Industry Sales Employment	3	6	14	22	
Exogenous Industry Demand Employment	5	8	17	30	
Total	7	14	31	52	
				52	

Employment Breakdown	2018	2019	2020	Sum
Direct	$0.7	$1.4	$3.3	$5.4
Indirect	$0.1	$0.3	$0.7	$1.1
Induced	$0.3	$0.6	$1.4	$2.2
Total	$1.1	$2.3	$5.4	$8.7
				$8.7

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Company-owned Electric Heat

Cost Assumptions

Opex: Non-Incentive Administrative Costs (Flat)

Admin Cost Category	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Program Management	$ 36,000	$ 81,000	$ 36,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Implementation and Evaluation Consultant	$ 25,000	$ 75,000	$ 25,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 61,000	$ 156,000	$ 61,000	**$ 278,000**	$ -	$ -	$ -	$ -	$ -	$ -

Capex: Annual System Installations & Associated Capex

Installation Schedule	**$ 2,018**	**$ 2,019**	**$ 2,020**	**$ 2,021**	**$ 2,022**	**$ 2,023**	**$ 2,024**	**$ 2,025**	**$ 2,026**	**$ 2,027**
ASHP 3 Ton- System A Installations	$ 133	$ 150	$ 167							
GSHP 4 Ton Horizontal Loop-System B Installations	$ 3	$ 4	$ 5							
GSHP 82 Ton Vertical Loop- System C Installations		$ 1								
Per Ton System Installation Cost per Ton										
ASHP 3 Ton- System A : Cost per ton	$ 3,040	$ 2,888	$ 2,744							
GSHP 4 Ton Horizontal Loop-System B Cost per ton	$ 7,589	$ 7,209	$ 6,849							
GSHP 82 Ton Vertical Loop- System C Cost per ton	$ 6,098	$ 6,098	$ 6,098							
Total Systems installed	$ 136	$ 155	$ 172	$ 462						
Annual System Installation Cost	$ 1,288,848	$ 1,907,741	$ 1,511,522	$ 4,708,111						
Annual Capex ($)	**$ 1,288,848**	**$ 1,907,741**	**$ 1,511,522**	**$ 4,708,111**						
Total Capex from System Installations	**$ 4,708,111**		**Grand Total**	**$ 4,986,111**						

Opex: Annual Associated Operating Expenditures

	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Large Scale GSHP										
Program Administration		$45,000								
Consulting		$50,000								
Oil Dealer Training and Support										
Program Administration	$36,000	$36,000	$36,000							
Consulting	$25,000	$25,000	$25,000							
Annual OPEX ($)	$61,000	$156,000	$61,000	**$278,000**						
Total OPEX	$278,000									
	$400,000	$312,000	$122,000	$834,000						

Economic development impact of Electric Heat Pump Installation

REMI Inputs (Assumes labor 50% of cost)	**2018**	**2019**	**2020**	**Sum**
Exogenous Final Demand - Construction	644,424	953,870	755,761	$2,354,055
Professional Services	61,000	156,000	61,000	$278,000
Fuel Cost Savings	0	0	0	
Increased electricity sales	0	0	0	0
Decreased oil sales	0	0	0	0
Total	$705,424	$1,109,870	$816,761	$2,632,055

REMI Results	**2018**	**2019**	**2020**	**Sum**		
RI GDP ($m)	$0.7	$1.1	$0.9	$2.7	Jobs/$mill	
Jobs created	8	12	9	30	5.9	
Personal Income ($m)	$0.5	$0.8	$0.7	$1.9		State and Local Effective Tax Rate
State and Local Tax Revenue ($m)	$0.1	$0.1	$0.1	$0.2		0.112

Employment Breakdown	**2018**	**2019**	**2020**	**Sum**	
Direct	5	8	6	18	62%
Indirect	1	2	1	4	13%
Induced	2	3	2	7	25%
Total	8	12	9	30	100%

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	8	12	9	30
Intermediate Demand Employment	1	2	1	4
Local Consumption Demand Employment	1	2	2	5
Government Demand Employment	0	0	0	0
Investment Activity Demand Employment	1	1	1	2
Exports to Multiregions Employment	0	0	0	0
Exports to Rest of Nation Employment	0	0	0	0
Exports to Rest of World Employment	0	0	0	0
Total	2	3	2	7
Direct Industry Employment				
Exogenous Industry Sales Employment	0	0	0	0
Exogenous Industry Demand Employment	5	7	5	17
Total	5	7	5	17

GDP Breakdown	**2018**	**2019**	**2020**	**Sum**
Direct	$0.4	$0.7	$0.6	$1.7
Indirect	$0.1	$0.2	$0.1	$0.4
Induced	$0.2	$0.3	$0.2	$0.7
Total	$0.7	$1.1	$0.9	$2.7
				$2.7

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#	Description	Category	Rate	NPV	Nominal	Yr 1 FY 20	Yr 2 FY 21	Yr 3 FY 22	Yr 4 FY 23	Yr 5 FY 24	Yr 6 FY 25	Yr 7 FY 26	Yr 8 FY 27	Yr 9 FY 28	Yr 10 FY 29	Yr 11 FY 30	Yr 12 FY 31	Yr 13 FY 32	Yr 14 FY 33	Yr 15 FY 34	Yr 16 FY 35	Yr 17 FY 36	Yr 18 FY 37	Yr 19 FY 38	Yr 20 FY 39
BENEFITS																									
2	Benefit from eliminated AMR meter readers	Opex	Labor	$13.51	$ 31.44	$ -	$ -	$ 0.46	$ 1.42	$ 1.47	$ 1.51	$ 1.56	$ 1.60	$ 1.65	$ 1.70	$ 1.75	$ 1.80	$ 1.86	$ 1.91	$ 1.97	$ 2.03	$ 2.09	$ 2.15	$ 2.22	$ 2.28
3	Benefit from eliminated AMR meter reader vehicle costs	Opex	NonLabor	$1.23	$ 2.85	$ -	$ -	$ 0.04	$ 0.13	$ 0.14	$ 0.14	$ 0.14	$ 0.15	$ 0.15	$ 0.16	$ 0.16	$ 0.16	$ 0.17	$ 0.17	$ 0.18	$ 0.18	$ 0.19	$ 0.19	$ 0.20	$ 0.20
4	CO2 benefit from eliminated AMR reading vehicle emissions	Emissions	GHG	$0.02	$ 0.04	$ -	$ -	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
5	Benefit from reduction of meter investigations	Opex	Labor	$6.20	$ 14.43	$ -	$ -	$ 0.21	$ 0.65	$ 0.67	$ 0.69	$ 0.71	$ 0.74	$ 0.76	$ 0.78	$ 0.80	$ 0.83	$ 0.85	$ 0.88	$ 0.90	$ 0.93	$ 0.96	$ 0.99	$ 1.02	$ 1.05
6	Benefit from remote metering capabilities	Opex	Labor	$26.90	$ 62.58	$ -	$ -	$ 0.92	$ 2.83	$ 2.92	$ 3.01	$ 3.10	$ 3.19	$ 3.28	$ 3.38	$ 3.48	$ 3.59	$ 3.70	$ 3.81	$ 3.92	$ 4.04	$ 4.16	$ 4.29	$ 4.41	$ 4.55
9	Benefit from improvement in bad debt write-offs	Opex	NonLabor	$0.00	$ 19.75	$ -	$ -	$ 0.87	$ 0.89	$ 0.91	$ 0.94	$ 0.96	$ 0.99	$ 1.02	$ 1.04	$ 1.07	$ 1.10	$ 1.13	$ 1.16	$ 1.19	$ 1.23	$ 1.26	$ 1.29	$ 1.33	$ 1.36
11	Benefit from mitigation / reduction of damage claims	Opex	NonLabor	$2.84	$ 6.41	$ -	$ -	$ 0.28	$ 0.29	$ 0.30	$ 0.30	$ 0.31	$ 0.32	$ 0.33	$ 0.34	$ 0.35	$ 0.36	$ 0.37	$ 0.38	$ 0.39	$ 0.40	$ 0.41	$ 0.42	$ 0.43	$ 0.44
13	Benefit from reduction of AMR theft / undermetering	Opex	NonLabor	$0.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
14	Benefit from VVO/AMI integration	Opex	GHG	$13.73	$ 36.88	$ -	$ -	$ -	$ 0.71	$ 0.82	$ 0.97	$ 1.13	$ 1.30	$ 1.43	$ 1.57	$ 1.76	$ 1.97	$ 2.17	$ 2.43	$ 2.68	$ 2.95	$ 3.25	$ 3.57	$ 3.91	$ 4.28
15	CO2 benefit from VVO/AMI integration	Losses	GHG	$5.65	$ 13.44	$ -	$ -	$ 0.14	$ 0.54	$ 0.58	$ 0.62	$ 0.65	$ 0.68	$ 0.71	$ 0.73	$ 0.75	$ 0.77	$ 0.79	$ 0.80	$ 0.81	$ 0.81	$ 0.81	$ 0.81	$ 0.85	$ 1.58
16	Benefit from Energy Insights/High usage alerts	Revenue	GHG	$22.02	$ 51.22	$ -	$ 0.55	$ 1.80	$ 1.87	$ 2.00	$ 2.13	$ 2.26	$ 2.31	$ 2.39	$ 2.53	$ 2.67	$ 2.79	$ 2.94	$ 3.09	$ 3.23	$ 3.39	$ 3.55	$ 3.72	$ 3.91	$ 4.08
17	CO2 benefit from Energy Insights/High usage alerts	Losses	GHG	$8.03	$ 16.42	$ -	$ 0.36	$ 1.05	$ 1.03	$ 1.00	$ 0.98	$ 0.96	$ 0.94	$ 0.92	$ 0.91	$ 0.88	$ 0.86	$ 0.83	$ 0.81	$ 0.78	$ 0.75	$ 0.72	$ 0.69	$ 0.70	$ 1.25
18	CO2 benefit from reduction of meter investigations	Emissions	GHG	$0.01	$ 0.03	$ -	$ -	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
19	CO2 benefit from remote metering capabilities	Emissions	GHG	$0.17	$ 0.37	$ -	$ -	$ 0.01	$ 0.03	$ 0.03	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.02	$ 0.03
20	Outage Management operational benefit	Opex	NonLabor	$2.05	$ 4.62	$ -	$ -	$ 0.20	$ 0.21	$ 0.21	$ 0.22	$ 0.23	$ 0.23	$ 0.24	$ 0.24	$ 0.25	$ 0.26	$ 0.26	$ 0.27	$ 0.28	$ 0.29	$ 0.29	$ 0.30	$ 0.31	$ 0.32
25	Benefit from Electric Vehicle TVP	Opex	GHG	$24.81	$ 68.66	$ -	$ -	$ -	$ 0.14	$ 0.56	$ 0.88	$ 1.72	$ 2.27	$ 2.96	$ 3.44	$ 3.99	$ 4.27	$ 4.96	$ 5.61	$ 5.80	$ 6.00	$ 6.20	$ 6.42	$ 6.65	$ 6.78
26	Low-End Red. & Opt-In benefit from Critical Peak Pricing (CPP) peak sh	Opex	Time Vari	$4.62	$ 12.78	$ -	$ -	$ -	$ 0.05	$ 0.15	$ 0.21	$ 0.26	$ 0.34	$ 0.45	$ 0.57	$ 0.71	$ 0.86	$ 1.03	$ 1.13	$ 1.17	$ 1.17	$ 1.17	$ 1.17	$ 1.17	$ 1.17
27	Low-End Red. & Opt-In benefit from Avoided Energy due to Time-of-Use	Opex	Time Vari	$3.87	$ 10.68	$ -	$ -	$ -	$ 0.05	$ 0.11	$ 0.18	$ 0.25	$ 0.33	$ 0.42	$ 0.51	$ 0.59	$ 0.69	$ 0.81	$ 0.83	$ 0.88	$ 0.92	$ 0.96	$ 1.01	$ 1.05	$ 1.09
28	Low-End Red. & Opt-In CO2 savings from Avoided Energy due to Time-o	Emissions	Time Vari	$2.89	$ 7.62	$ -	$ -	$ -	$ 0.06	$ 0.11	$ 0.17	$ 0.23	$ 0.29	$ 0.35	$ 0.42	$ 0.48	$ 0.54	$ 0.61	$ 0.61	$ 0.62	$ 0.62	$ 0.62	$ 0.63	$ 0.63	$ 0.63
30	Benefit from Electromechanical meter Accuracy	Opex	NonLabor	$19.46	$ 38.85	$ -	$ 2.08	$ 4.38	$ 2.43	$ 2.34	$ 2.17	$ 2.07	$ 1.91	$ 1.78	$ 1.61	$ 1.47	$ 1.32	$ 1.15	$ 0.97	$ 0.77	$ 0.57	$ 0.32	$ 0.01	$ (0.00)	$ 11.50
100	Electric AMR Equipment Meter Replacement	Capex	NonLabor	$32.00	$ 48.82	$ 0.86	$ 0.89	$ 16.10	$ 12.65	$ 0.96	$ 1.41	$ 1.01	$ 1.32	$ 1.07	$ 1.34	$ 1.13	$ 1.16	$ 1.28	$ 1.27	$ 1.39	$ 1.37	$ 1.58	$ 1.98	$ 0.05	$ -
102	AMI electric meter installation cost - Capex portion	Capex	Labor	$20.60	$ 31.56	$ 0.55	$ 0.57	$ 10.30	$ 8.11	$ 0.62	$ 0.91	$ 0.66	$ 0.85	$ 0.70	$ 0.87	$ 0.74	$ 0.76	$ 0.84	$ 0.84	$ 0.92	$ 0.91	$ 1.06	$ 1.32	$ 0.03	$ -
105	Avoided AMI demonstration period cost	Opex	NonLabor	$1.07	$ 1.16	$ 1.16	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
123	Avoided cost from call center and AMO, implementation	Opex	Labor	$2.44	$ 2.94	$ -	$ 1.08	$ 1.87	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
124	Avoided AMI Internal Project Management Leadership Staff - Capex porti	Capex	Labor	$0.72	$ 0.86	$ -	$ 0.42	$ 0.44	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
126	AMI electric meter installation cost - COR portion	COR	Labor	$0.64	$ 0.98	$ 0.02	$ 0.02	$ 0.32	$ 0.25	$ 0.02	$ 0.03	$ 0.02	$ 0.03	$ 0.02	$ 0.03	$ 0.02	$ 0.02	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.04	$ 0.00	$ -
128	Avoided AMI External Project Management labor cost - Opex portion	Opex	Labor	$0.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
129	Avoided AMI Internal Project Management Leadership Staff - Opex portic	Opex	Labor	$0.38	$ 0.41	$ 0.41	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
134	AMI inventory equipment cost	Capex	NonLabor	$0.80	$ 1.22	$ 0.02	$ 0.02	$ 0.40	$ 0.32	$ 0.02	$ 0.04	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.04	$ 0.05	$ 0.00	$ -
203	Avoided CMS Deployment Center, Facility cost	Capex	NonLabor	$1.35	$ 1.60	$ -	$ 1.05	$ 0.54	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
204	Avoided CMS Back Office & Clerical cost	Capex	Labor	$1.86	$ 2.20	$ -	$ 1.45	$ 0.75	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
205	Avoided Service Representative Tools / Uniform cost	Capex	NonLabor	$0.19	$ 0.22	$ -	$ 0.16	$ 0.06	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
206	Avoided Installed meter Quality Assurance / Quality Check cost	Capex	NonLabor	$0.61	$ 0.72	$ -	$ 0.48	$ 0.24	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
207	Avoided CMS Deployment Coordination Labor cost	Capex	Labor	$0.82	$ 0.97	$ -	$ 0.64	$ 0.33	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
208	Avoided CMS Field Installer Initial Training	Capex	Labor	$0.78	$ 0.87	$ 0.43	$ 0.44	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
209	Avoided CMS Cellular Communication cost	Capex	NonLabor	$0.06	$ 0.07	$ -	$ 0.04	$ 0.02	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
210	Avoided Handheld Devices cost	Capex	NonLabor	$0.05	$ 0.06	$ -	$ 0.06	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
302	Avoided MDS System Development Testing	Capex	Labor	$0.06	$ 0.07	$ 0.05	$ 0.02	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
400	Avoided Customer Engagement Plan Cost	Opex	NonLabor	$2.07	$ 2.74	$ 0.23	$ 0.85	$ 0.50	$ 0.25	$ 0.23	$ 0.15	$ 0.14	$ 0.12	$ 0.10	$ 0.11	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.01	$ 0.01	$ 0.01	$ 0.01
540	Avoided FCS Costs	Opex	NonLabor	$0.28	$ 0.67	$ -	$ -	$ 0.01	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.03	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.04	$ 0.05	$ 0.05	$ 0.05	$ 0.05
541	Avoided Interval Meter Reading Costs	Opex	NonLabor	$0.02	$ 0.04	$ -	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ -
	Total Benefit			**$ 224.80**	**$ 497.25**	**$ 3.73**	**$ 11.18**	**$ 42.25**	**$ 34.95**	**$ 16.21**	**$ 17.72**	**$ 18.45**	**$ 20.00**	**$ 20.83**	**$ 22.37**	**$ 23.16**	**$ 24.22**	**$ 25.88**	**$ 27.09**	**$ 28.03**	**$ 28.69**	**$ 29.76**	**$ 31.14**	**$ 28.95**	**$ 42.66**

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COSTS

100	AMI electric meter equipment cost	Capex	NonLabor	$50.50	61.25	-	20.03	41.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	AMI electric meter installation cost - Capex portion	Capex	Labor	$23.35	28.33	-	9.25	19.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	AMI failed meter equipment replacement cost	Capex	NonLabor	$0.89	1.97	-	0.03	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.13
105	AMI demonstration period cost	Opex	NonLabor	$1.43	1.54	1.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	AMI network engineering, design, contracting cost	Capex	NonLabor	$0.10	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	Network communications equipment cost, Electric Meters	Capex	NonLabor	$1.29	1.56	-	0.51	1.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
112	Network communications equipment cost, Gas Meters	Capex	NonLabor	$0.18	0.22	-	0.07	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
113	Network communications installation cost, Electric Meters	Capex	Labor	$0.10	0.13	-	0.04	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114	Network communications installation cost, Gas Meters	Capex	Labor	$0.01	0.02	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115	Network communications LTE backhaul cost, Electric Meters	Opex	NonLabor	$0.95	2.12	-	0.03	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14
116	Network communications LTE backhaul cost, Gas Meters	Opex	NonLabor	$0.11	0.26	-	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
117	AMI meter cellular service cost, Electric Meters	Opex	NonLabor	$1.55	3.44	-	0.05	0.15	0.15	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.22	0.23	0.23
118	Network communications equipment cost upgrade	Capex	NonLabor	$1.14	2.35	-	-	-	-	-	-	-	-	-	2.35	-	-	-	-	-	-	-	-	-	-
119	AMI communications failed equipment replacement cost	Capex	NonLabor	$0.19	0.43	-	-	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
120	AMI communications equipment O&M cost (outside warranty)	Opex	NonLabor	$0.36	0.85	-	-	-	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
121	AMI External Project Management labor cost - Capex portion	Capex	Labor	$1.75	2.02	-	2.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
123	Cost from call center and AMO, implementation	Opex	Labor	$4.87	5.89	-	2.15	3.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
124	AMI Internal Project Management Leadership Staff - Capex portion	Capex	Labor	$0.72	0.86	-	0.42	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125	AMI Internal Project Management Business Support - Capex portion	Capex	Labor	$2.42	2.70	1.28	1.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
126	AMI electric meter installation cost - COR portion	COR	Labor	$0.72	0.88	-	0.29	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
128	AMI External Project Management labor cost - Opex portion	Opex	Labor	$1.83	1.97	1.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
129	AMI Internal Project Management Leadership Staff - Opex portion	Opex	Labor	$0.38	0.41	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130	AMI Internal Project Management Business Support- Opex portion	Opex	Labor	$1.28	1.38	1.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
134	AMI inventory equipment cost	Capex	NonLabor	$1.26	1.53	-	0.50	1.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	Professional Services - Field Deployment Support Workstream cost	Capex	Labor	$3.21	4.07	-	0.42	2.00	1.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
136	Professional Services - Field Deployment Support Workstream Travel Exp	Opex	Labor	$0.48	0.61	-	0.06	0.30	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201	Back-Office Revenue Assurance Analyst cost	Opex	Labor	$0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
202	Cost of theft investigations	Opex	Labor	$0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
203	CMS Deployment Center, Facility cost	Capex	NonLabor	$1.35	1.60	-	1.05	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
204	CMS Back Office & Clerical cost	Capex	Labor	$1.86	2.20	-	1.45	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205	Service Representative Tools / Uniform cost	Capex	NonLabor	$0.19	0.22	-	0.16	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
206	Installed meter Quality Assurance / Quality Check cost	Capex	NonLabor	$0.61	0.72	-	0.48	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
207	CMS Deployment Coordination Labor cost	Capex	Labor	$0.82	0.97	-	0.64	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
208	CMS Field Installer Initial Training	Capex	Labor	$0.78	0.87	0.43	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
209	CMS Cellular Communication cost	Capex	NonLabor	$0.06	0.07	-	0.04	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
210	Handheld Devices cost	Capex	NonLabor	$0.05	0.06	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300	AMI Additional Meter Data Services labor cost	Opex	Labor	$4.18	8.88	-	0.34	0.70	0.36	0.37	0.38	0.39	0.41	0.42	0.43	0.44	0.46	0.47	0.48	0.50	0.51	0.53	0.54	0.56	0.58
301	Billing System Development Testing	Opex	Labor	$2.09	4.44	-	0.17	0.35	0.18	0.19	0.19	0.20	0.20	0.21	0.22	0.22	0.23	0.23	0.24	0.25	0.26	0.26	0.27	0.28	0.29
302	MDS System Development Testing	Capex	Labor	$0.61	0.66	0.49	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	Customer Engagement Plan Cost	Opex	NonLabor	$8.30	10.94	0.93	3.39	2.00	1.01	0.91	0.61	0.55	0.49	0.42	0.43	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
501	CSS Enhancements Capex Cost	Capex	NonLabor	$7.40	8.15	5.36	2.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
502	Professional Services - Head End/MDM Solution Program Management c	Opex	GHG	$2.20	2.59	0.28	1.29	1.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
503	Energy Monitoring Portal Opex Cost	Opex	NonLabor	$1.39	3.10	0.12	0.03	-	-	0.16	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.22	0.23	0.23	-
504	Green Button Connect Capex Cost	Capex	NonLabor	$2.79	3.05	2.27	0.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
513	Telecom Capex cost	Capex	NonLabor	$0.10	0.11	0.05	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
514	ESB Capex cost	Capex	NonLabor	$7.51	11.06	1.81	3.01	0.52	-	1.66	-	-	-	-	1.89	-	-	-	-	2.16	-	-	-	-	-
516	Information Management Capex cost	Capex	NonLabor	$2.44	3.09	0.84	0.99	0.62	0.12	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-
517	Data Lake Capex cost	Capex	NonLabor	$0.23	0.24	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
518	Professional Services - Head End/MDM Systems Implementation Workstr	Opex	GHG	$5.11	5.54	4.81	0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
519	SaaS Setup Fees - One Time Setup (Version upgrade and scale-up existi	Opex	GHG	$0.19	0.20	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
520	SaaS Fees - Headend Software (OWOCCM, OWOC PM, IEE MDM, IoT I	Opex	NonLabor	$52.68	121.07	-	1.45	4.03	4.29	4.57	5.27	5.58	5.91	6.25	6.60	6.82	7.00	7.19	7.39	7.59	7.79	8.00	8.22	8.44	8.67
521	Professional Services - System and Meter Firmware Upgrade cost	Opex	GHG	$0.59	1.05	-	-	-	-	-	-	-	1.05	-	-	-	-	-	-	-	-	-	-	-	-
522	Telecom Opex cost	Opex	NonLabor	$0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
523	Telecom RTB Cost	Opex	NonLabor	$6.65	14.85	-	0.11	0.41	0.59	0.68	0.72	0.76	0.80	0.85	0.88	0.90	0.93	0.95	0.98	1.00	1.03	1.06	1.09	1.12	-
524	ESB Opex cost	Opex	NonLabor	$0.52	0.59	0.21	0.30	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
525	ESB RTB Cost	Opex	NonLabor	$6.31	14.01	0.00	0.11	0.48	0.55	0.64	0.67	0.71	0.75	0.80	0.82	0.85	0.87	0.89	0.92	0.94	0.97	0.99	1.02	1.05	-
526	Data Lake Opex cost	Opex	NonLabor	$2.14	4.44	0.15	0.13	0.16	0.19	0.21	0.22	0.22	0.23	0.23	0.24	0.25	0.25	0.26	0.27	0.27	0.28	0.29	0.30	0.30	-
527	Professional Services - Head End/MDM Solution Program Management T	Opex	GHG	$0.33	0.39	0.04	0.19	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
528	Professional Services - Head End/MDM Systems Implementation Workstr	Opex	GHG	$0.77	0.83	0.72	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
529	Green Button Connect Opex Cost	Opex	NonLabor	$0.82	0.90	0.55	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
530	Information Management Opex cost	Opex	NonLabor	$0.47	1.00	0.02	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	-
531	Information Management RTB Cost	Opex	NonLabor	$3.07	6.83	-	0.06	0.20	0.27	0.31	0.33	0.35	0.37	0.39	0.40	0.41	0.42	0.44	0.45	0.46	0.47	0.48	0.50	0.51	-
532	Energy Monitoring Portal RTB Cost	Opex	NonLabor	$0.41	0.91	-	0.01	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	-
533	CSS Enhancements Opex Cost	Opex	NonLabor	$0.29	0.36	0.01	0.22	0.05	0.03	0.03	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
534	CSS Enhancements RTB Cost	Opex	NonLabor	$0.20	0.46	-	-	0.00	0.01	0.01	0.02	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	-
535	Green Button Connect RTB Cost	Opex	NonLabor	$4.93	10.86	-	0.15	0.40	0.42	0.49	0.52	0.55	0.58	0.61	0.63	0.65	0.67	0.68	0.70	0.72	0.74	0.76	0.78	0.80	-
536	Data Lake RTB cost	Opex	NonLabor	$1.29	2.85	-	0.03	0.10	0.11	0.13	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21	-
600	Cyber Security Project Capex Initial	Capex	NonLabor	$7.31	8.22	4.29	2.52	1.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
601	Cyber Security Project Opex Initial	Opex	NonLabor	$3.26	3.66	2.01	1.04	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
602	Cyber Security Project RTB O&M	Opex	NonLabor	$5.25	12.19	0.03	0.16	0.37	0.53	0.42	0.45	0.69	0.49	0.52	0.79	0.56	0.57	0.86	0.60	0.61	0.94	0.65	0.67	1.01	1.29
603	Cyber Security Refresh / Removal Capital	Capex	NonLabor	$7.91	18.94	-	-	-	1.27	0.06	1.75	1.31	0.19	0.06	1.42	1.99	0.07	1.68	0.30	0.07	3.87	0.95	0.25	1.87	1.85
604	Cyber Security Capital Refresh / Removal Opex	Opex	NonLabor	$3.94	8.86	-	-	0.00	0.22	0.00	1.98	0.24	0.00	0.00	0.26	2.27	0.00	0.29	0.00	0.00	2.90	0.00	0.00	0.33	0.34
	Total Cost			**$ 260.44**	**$ 428.91**	**$ 32.55**	**$ 62.33**	**$ 85.75**	**$ 12.52**	**$ 11.35**	**$ 13.97**	**$ 12.47**	**$ 12.42**	**$ 11.72**	**$ 18.37**	**$ 16.41**	**$ 12.53**	**$ 15.05**	**$ 13.45**	**$ 15.75**	**$ 20.95**	**$ 15.20**	**$ 14.89**	**$ 17.56**	**$ 13.66**

428.9120907

$260.44

REMI Inputs	**($2018m) FY 20**	**FY 21**	**FY 22**	**Sum**	
Construction (102, 113, 114)	0.00	9.30	19.18	**$ 28.47**	
Prof Services (121,123-125,127-130,206-208)	5.46	7.30	4.59	**$ 17.35**	
Waste Mgt/Remediation (126)	0.00	0.29	0.59	**$ 0.88**	**$ 46.70**
All Other Costs(Not Included)	$ 27.09	$ 45.45	$ 61.40	**$ 133.94**	
Total	**$ 32.55**	**$ 62.33**	**$ 85.75**	**$ 180.64**	
				$ 180.64	

REMI Inputs	**($2016m) FY 20**	**FY 21**	**FY 22**	**Sum**	
Construction (102, 113, 114)	0.00	8.92	18.40	**$ 27.31**	
Prof Services (121,123-125,127-130,206-208)	5.24	7.01	4.40	**$ 16.65**	
Waste Mgt/Remediation (126)	0.00	0.27	0.57	**$ 0.84**	**$ 44.80**
All Other Costs(Not Included)	$ 25.99	$ 43.60	$ 58.90	**$ 128.48**	
Total	**$ 31.22**	**$ 59.79**	**$ 82.26**	**$ 173.28**	
				$ 173.28	

2016 2018

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GDP Deflator	111.4964262	116.2331592	0.959248006

Source: Moody's Analytics, Oct 2017

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REMI Results							
	FY 20	FY 21	FY 22	Sum			
Jobs	38	171	280	489	10.5		
GDP	$3.8	$16.2	$27.7	$47.6	2.7		
Income	$2.3	$11.0	$19.5	$32.8			
State and Local Tax Revenue ($m)	$0.3	$1.2	$2.2	$3.7		0.063	0.112

Employment Breakdown						
	FY 20	FY 21	FY 22	Sum		
Direct	23	105	173	301		62%
Indirect	6	24	38	68		14%
Induced	9	42	69	120		25%
Total Jobs	38	171	280	489		100%
				489		
Total Employment	38	171	280	489		

	FY 20	FY 21	FY 22	Sum
Intermediate Demand Employment	6	24	38	68
Local Consumption Demand Employment	6	29	47	83
Government Demand Employment	0	1	1	2
Investment Activity Demand Employment	3	12	22	37
Exports to Multiregions Employment	0	1	0	1
Exports to Rest of Nation Employment	0	-1	-1	-2
Exports to Rest of World Employment	0	0	0	0
Total	9	42	69	120
Direct Jobs				
Exogenous Industry Sales Employment	0	0	0	0
Exogenous Industry Demand Employment	22	99	162	283
Total	22	99	162	283

GDP Breakdown				
	FY 20	FY 21	FY 22	Sum
Direct	$2.3	$10.0	$17.1	$29.3
Indirect	$0.6	$2.3	$3.7	$6.6
Induced	$0.9	$4.0	$6.8	$11.7
Total Jobs	$3.8	$16.2	$27.7	$47.6
				$47.6

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Rhode Island Investment Spending Plan
Planning through Construction and Installation

Rhode Island Investment Proposal
Total Investment Spending and Economic Impacts by Project
Planning through Construction Phase (2018-2021)

Year	2018	2019	2020	2021	Sum		2018	2019	2020	2021	Sum
Spending Plan (Labor & Materials)											
Company-Owned Solar	$0.8	$2.6	$5.4	$0.2	$9.0		$840,744	$2,606,439	$5,365,629	$190,775	$9,003,586
Company-Owned Storage	$0.9	$1.4	$0.0	$0.0	$2.4		$910,875	$1,382,813	$41,250	$41,250	$2,376,188
Electric Vehicle Service Equipment (EVSE)	$1.4	$2.4	$5.3	$0.0	$9.1		$1,377,313	$2,368,863	$5,334,831	$0	$9,081,008
Electric Heat Pump Conversions	$1.3	$2.1	$1.6	$0.0	$5.0		$1,349,848	$2,063,741	$1,572,522	$0	$4,986,111
AMI Meters*	$0.0	$32.6	$62.3	$85.8	$180.6						
Total	$4.5	$41.0	$74.6	$86.0	$206.1						

Impact on RI GDP ($m)	2018	2019	2020	2021	Sum	
Company-Owned Solar	$0.7	$1.5	$3.2	$0.5	**$6.0**	
Company-Owned Storage	$0.5	$0.8	$0.1	$0.1	**$1.5**	
Electric Vehicle Service Equipment (EVSE)	$1.1	$2.3	$5.4	$0.0	**$8.7**	
Electric Heat Pump Conversions	$0.7	$1.1	$0.9	$0.0	**$2.7**	
AMI Meters	$0.0	$3.8	$16.2	$27.7	**$47.6**	
Total	$3.0	$9.5	$25.8	$28.3	**$66.6**	$66.6

Job Impacts - All Projects

	2018	2019	2020	2021	Sum		
Direct	21	60	163	174	419	62%	679
Indirect	4	13	36	38	92	14%	
Induced	8	24	66	70	169	25%	
Total	34	98	265	283	679	100%	

Job Impacts - Non AMI

	2018	2019	2020	2021	Sum
Direct	21	37	58	1	117
Indirect	4	8	12	0	24
Induced	8	15	24	1	49
Total	34	59	94	3	190

Job Impacts - Electric Heat

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	2018	2019	2020	2021	Sum
Direct	5	8	6	0	18
Indirect	1	2	1	0	4
Induced	2	3	2	0	7
Total	8	12	9	0	30

Job Impacts - Company Owned Solar

	2018	2019	2020	2021	Sum
Direct	5	10	19	1	35
Indirect	1	2	4	0	7
Induced	2	4	8	1	15
Total	8	16	31	2	57

Job Impacts - Company Owned Storage

	2018	2019	2020	2021	Sum
Direct	3	5	0	0	9
Indirect	1	1	0	0	2
Induced	1	2	0	0	4
Total	6	8	1	0	15

Job Impacts - Electric Vehicles

	2018	2019	2020	2021	Sum
Direct	8	14	33	0	55
Indirect	2	3	7	0	11
Induced	3	6	14	0	22
Total	12	23	53	0	89

Job Impacts - AMI*

	2018	2019	2020	2021	Sum
Direct	0	23	105	173	301
Indirect	0	6	24	38	68
Induced	0	9	42	69	120
Total	0	38	171	280	489

Rhode Island Economic Impact Summary - All Projects

	2018	2019	2020	2021	Sum	
Total Jobs*	34	98	265	283	679	
GDP ($m)	$3.0	$9.5	$25.8	$28.3	$66.6	66.6
Personal Income ($m)	$2.0	$6.1	$17.5	$20.0	$45.5	45.5
State and Local Tax Revenue ($m)	$0.2	$0.7	$2.0	$2.2	$5.1	5.1
0.112						

* AMI job impact does not include reduced meter reading positions.

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Division 5-6

Request:

With regard to the most recent ISR filing submitted by the Company, what portion of the Company's total annual capital expenditures were recovered through the ISR relative to other ratemaking mechanisms. Please provide the actual ISR capital expenditures and the actual non-ISR capital expenditures, as well as the proportions.

Response:

Reflecting the most recent Infrastructure, Safety, and Reliability (ISR) filing, Fiscal Year 2017 Reconciliation, submitted by Narragansett Electric, 94.6 percent of Narragansett Electric's total annual capital expenditures were recovered through the ISR relative to other ratemaking mechanisms. Additions and proportions are reflected in the table below.

ISR Additions	$	75,489,338	94.62%
Facilities Additions	$	4,219,708	5.29%
Other Additions	$	79,059	0.10%
Total Additions	$	79,788,106	100.00%

(This response is identical to the Company's response to Division 1-6 in Docket No. 4780.)

Prepared by or under the supervision of: Melissa Little and Sonny Anand

Division 5-7

Request:

With regard to the most recent ISR filing submitted by the Company, what portion of the Company's total annual non-capital expenditures were recovered through the ISR relative to other ratemaking mechanisms. Please provide the actual ISR non-capital expenditures and the actual non-ISR non-capital expenditures, as well as the proportions.

Response:

Reflecting the most recent Infrastructure, Safety, and Reliability (ISR) filing, Fiscal Year 2017 ISR Reconciliation (Docket No. 4592), submitted by Narragansett Electric, 3.93 percent of Narragansett Electric's total annual non-capital expenditures were recovered through the ISR relative to other ratemaking mechanisms. The chart below provides the actual ISR non-capital expenditures and the actual non-ISR non-capital expenditures, as well as the proportions.

(1)	Non-Capital ISR Expenditures	$ 9,466,647	3.93%
(2)	Non-Capital Non-ISR Expenditures	$231,585,513	96.07%
(3)	Total Operation and Maintenance Expenses	$241,052,160	100.00%

(1) Per Fiscal Year 2017 Electric ISR Reconciliation (Docket 4592)
(2) Line 2 = Line 3 - Line 1
(3) FERC Form 1 Dec 2016 - FERC 3Q March 2016 + FERC 3Q March 2017 Net of Integrated Facilities Agreement

(This response is identical to the Company's response to Division 1-7 in Docket No. 4780.)

Prepared by or under the supervision of: Melissa Little and Sonny Anand

Division 5-8

Request:

Please describe how the regulatory review of the PST Factor and the PST Reconciliation Factor would differ from the regulatory review of the ISR, in terms of timing, stakeholder input, and related procedures. Does the Company intend to coordinate or synchronize the two review processes?

Response:

The regulatory review process for the Company's Infrastructure, Safety, and Reliability (ISR) Plans for Narragansett Electric and Narragansett Gas is established by statute, at R.I. Gen. Laws §§ 39-1-27.7.1(c)(2), (d). Subsection (d) requires the Company to submit to the Division of Public Utilities and Carriers (Division) proposed ISR Plans for specific categories of costs for the prospective fiscal year, and the Division shall cooperate in good faith to reach an agreement on the proposed ISR Plans within 60 days. To the extent the Division and the Company mutually agree on the proposed ISR Plans, the Company is required to file a proposed ISR Plan for Narragansett Electric and Narragansett Gas to the Public Utilities Commission (PUC) for approval. The PUC has 90 days in which to review and approve the ISR Plans. If the Company and the Division are unable to mutually agree on the proposed ISR Plans, the Company is required to file proposed ISR Plans with the PUC and, if the investments and spending are found to be reasonably needed to maintain safe and reliable distribution service over the short and long term, approve the proposed ISR Plans within 90 days.

In conjunction with the filing of the annual electric ISR Plan, Narragansett Electric proposes CapEx Factors for each rate class in accordance with Narragansett Electric's ISR Provision, RIPUC No. 2118, which are designed to recover the annual revenue requirement associated with cumulative forecasted and actual capital investment through the end of the upcoming ISR Plan year ending March 31, which coincides with the Company's fiscal year. The proposed CapEx Factors become effective on and after April 1 of each ISR Plan year upon PUC approval. Narragansett Electric submits a filing by August 1 of each year (the Reconciliation Filing) in which Narragansett Electric proposes CapEx Reconciling Factors to become effective for the 12 months beginning October 1. In the Reconciliation Filing, Narragansett Electric compares the revenue requirement on actual cumulative incremental capital investment to actual billed revenue generated from the CapEx Factors for the applicable reconciliation period, and any over- or under-recovery of this revenue requirement is credited to, or recovered from, customers through the CapEx Reconciling Factors. The amount approved for recovery or crediting through CapEx Reconciling Factors is also subject to reconciliation with actual amounts billed through the CapEx Reconciling Factors and any difference is reflected in future CapEx Reconciling Factors. Narragansett Electric also proposes operation and maintenance (O&M) factors to recover O&M expenses relating to inspection and maintenance and vegetation management activities through the O&M component of its ISR Provision.

Prepared by or under the supervision of: Melissa Little

In conjunction with Narragansett Gas filing its ISR Plan, Narragansett Gas proposes ISR factors for recovery of capital investments and O&M expenses, except that the Gas ISR reflects estimated O&M expenses associated with additional personnel to support main replacement work for the upcoming fiscal year. Narragansett Gas submits an annual reconciliation filing on August 1 that calculates the annual revenue requirement on actual cumulative capital investment and actual O&M expenses covered by the ISR Plan. Narragansett Gas determines whether it has over- or under-recovered this revenue requirement in its annual Distribution Adjustment Clause (DAC) filing by comparing this revenue requirement with the revenue billed through its ISR factors. The over- or under-recovery balance forms the basis for the calculation of ISR reconciliation factors which go into effect on November 1.

In the Company's Power Sector Transformation (PST) filing, the Company has proposed an annual plan process similar to the electric and gas ISR Plans through its proposed PST tariff provision, RIPUC No. 2205 (PST Provision). This process contemplates filing the annual PST Plan with the PUC by December 1 for the 2020 PST Plan Year (which aligns with the Company's fiscal year 2020), and January 1 for each PST Plan Year thereafter, with approval by April 1. In addition, the PST Provision includes a proposed methodology for calculating the PST Factors and Reconciliation Factors, which is similar to the existing ISR mechanisms. Similar to the ISR factors, the PST Factors would become effective April 1 and would provide for concurrent recovery of PST investments and expenses. Estimated PST investments and expenses upon which the PST Factors would be based would be subject to reconciliation to actual, and also reconciled to the actual revenue billed through the PST Factors. This process would be identical to that followed for the ISR Plans. Finally, any over- or under-recovery of each year's PST costs as determined through the annual reconciliation would be reflected in PST adjustment factors that would take effect the following October 1 for Narragansett Electric and November 1 for Narragansett Gas, identical to those of the ISR Plans.

Although the Company envisions a similar stakeholder process to what is currently in place for the ISR Plans, the stakeholder process would not be statutorily required as with the ISR Plans, and it is likely that the interested stakeholder group may be broader than or different from that of the ISR Plans. In addition, the PUC would have wider discretion over that process and its timing than what is statutorily prescribed for the ISR Plans. The Company believes it is important to align the two review processes; however, it is important to note that each process is separate and distinct. The statutory purpose of the ISR Plans is for capital investments and other costs related to maintaining the safety and reliability of the Company's electric and gas distribution systems; whereas, the proposed investments in the PST Plan are broader than the statutorily prescribed categories for the ISR Plan, and are focused on customer empowerment, system efficiency and resiliency, and the ability to integrate large scale distributed resources. Please also see the Company's response to Division 5-10.

(This response is identical to the Company's response to Division 1-8 in Docket No. 4780.)

Prepared by or under the supervision of: Melissa Little

Division 5-9

Request:

Please describe how the recovery of the PST costs would differ from the recovery of costs reviewed through the ISR?

Response:

Please see the Company's response to Division 5-8.

(This response is identical to the Company's response to Division 1-9 in Docket No. 4780.)

Division 5-10

Request:

Please explain why the Company does not simply submit all PST costs to the ISR review, and recover all PST costs through the ISR process, instead of creating the PST Factor and the PST Reconciliation Factor.

Response:

The Decoupling Act[1] requires the Company to file with the Public Utilities Commission (PUC) an annual infrastructure, safety, and reliability (ISR) spending plan for each fiscal year. The Act also requires the Company to file with the PUC an annual reconciliation filing that includes: (a) the reconciliation of the prior fiscal year's revenue requirement on actual cumulative ISR eligible capital investment with revenue billed through the ISR CapEx Factors; and (b) a reconciliation of the prior year's actual expense associated with vegetation management and inspection and maintenance costs with revenue billed through the ISR O&M Factors.[2] The Company reflects the differences in reconciliation factors applicable to all retail delivery service customers. Prior to the beginning of the upcoming fiscal year, the Company develops the annual spending plan and consults with the Division of Public Utilities and Carriers (Division) to reach a mutually agreed-upon spending plan. The Act explicitly allows spending for specific categories:

> (1) Capital spending on utility infrastructure;
>
> (2) For electric-distribution companies, operation and maintenance expenses on vegetation management;
>
> (3) For electric-distribution companies, operation and maintenance expenses on system inspection, including expenses from expected resulting repairs; and
>
> (4) Any other costs relating to maintaining safety and reliability that are mutually agreed upon by the Division and the Company.

The primary objective of the annual ISR Plan and reconciliation mechanism is to allow the Company to make infrastructure upgrades, repairs, and other capital investments, which are necessary to provide safe and reliable electric and gas distribution service to its customers, pursuant to a pre-approved spending plan. The consultation process with the Division ensures

[1] R.I. Gen. Laws §§ 39-1-27.7.1(c)(2), (d).
[2] Although Narragansett Electric's ISR Plan reconciliation filing presents two reconciliations (one each for capital and O&M) of actual revenue requirement and billed revenue and proposes two reconciliation factors, Narragansett Gas's ISR Plan reconciliation filing only presents the calculation of the actual revenue requirement, and the reconciliation against billed revenue is presented in the annual Distribution Adjustment Charge filing.

stakeholder input on the types of capital investments and limited operation and maintenance expenses that are appropriate for the Company to undertake during the next fiscal year, as well as the associated budget. Although the Company has received approval to include limited grid modernization-type investments (e.g., Volt/VAR optimization) in prior Narragansett Electric ISR Plans, and recently proposed an Advanced Metering Infrastucture pilot in the proposed Narragansett Electric Fiscal Year 2019 ISR Plan in RIPUC Docket No. 4783, these investments, while enhancing reliability, are limited in scope and cost. In addition to the statutory limitations on the categories of spending, budgetary constraints in the ISR Plan do not permit a full roll-out of the types and scale of investments that the Company has proposed through the Power Sector Transformation (PST) Plan, which go beyond safety and reliability.

The Company has proposed an annual plan process, together with the PST Factor and the PST Reconciliation Factor, similar to the ISR Plan, to allow the PUC an opportunity to review and determine, with stakeholder input, the types of investments that are appropriate for the Company to undertake consistent with state policy goals related to Power Sector Transformation, and to ensure the appropriate recovery of costs for those investments.

(This response is identical to the Company's response to Division 1-10 in Docket No. 4780.)

Division 5-11

Request:

Please explain why the Company did not request the inclusion of the Power Sector Transformation costs in base rates under a multi-year rate plan?

Response:

Base distribution-rate recovery in a single year case is not the appropriate ratemaking mechanism in circumstances where: (1) flexibility is needed to undertake new types of investments involving emerging technologies and lessons learned across the industry; and (2) there is a desire to allow for substantial stakeholder participation in planning and executing on those investments. In particular, it was apparent throughout the Docket 4600 process, as well as the Power Sector Transformation working-group process, that stakeholder input is critical. This stakeholder input will assure that future Power Sector Transformation investments best meet the goals of state policy, including customer choice and empowerment, while also providing significant market opportunities to make the on-going process self-sustaining, low cost, and efficient for all participants. If the Company were to move forward with these investments without the critical feedback and input of all interested participants, it would not be certain that its investments were appropriately meeting the needs of the state and its customers. Including an annual stakeholder process will support increased alignment and certainty around Power Sector Transformation investments before-hand, and result in quicker and more transformation of the power sector.

In this context, it is not feasible, practical, or desirable to have the Company develop a single year Power Sector Transformation plan with all associated costs and to lock that plan and the recovery of those associated costs into base distribution rates. To enable the collaborative, iterative process that will be required to balance the interests of all stakeholders, including most particularly the interests of the Company's customers, it is necessary to create a mechanism outside of base distribution rates that can allow a greater level of flexibility and transparency to the program implementation and cost recovery process.

(This response is identical to the Company's response to Division 1-11 in Docket No. 4780.)

Prepared by or under the supervision of: Kayte O'Neill

Division 5-12

Request:

Refer to Schedule PST-1, Chapter 3, pages 4-5.

a. Please provide the results of the VVO/CVR pilot project.
b. Please provide the estimated savings on the additional 40 feeders.

Response:

a. To date, the Company has performed a measurement and verification (M&V) on two feeders in the Volt-VAR optimization (VVO)/conservation voltage reduction (CVR) pilot area. The results of this analysis are included in Attachment DIV 5-12. In summary, a 3 percent reduction in both demand and energy was estimated for the two feeders in the VVO/CVR pilot area; actual M&V results were 3.27 percent and 3.39 percent. Results will vary by individual feeder and the Company continues to assume a 3 percent reduction for future installations. The M&V process for the remaining five feeders, which were fully functional in December of 2017, is currently in progress.

b. Based on an assumed 3 percent reduction in both demand and energy for an additional 40 feeders, the Company estimates a reduction of 11MW and 38 GWh annually once all 40 feeders are completed. Note that only Fiscal Year 2018 and Fiscal Year 2019 feeders have been identified to date, as feeders for the program are identified on a year-by-year basis. For the 18 feeders to be deployed in Fiscal Year 2018 and Fiscal Year 2019, the program expects to reduce capacity by 5.03 MW and energy by 17.12 GWh annually with the VVO/CVR program. These figures do not include the anticipated 1 percent incremental improvement from combining AMI data with VVO/CVR in the pilot proposed in Fiscal Year 2019.

(This response is identical to the Company's response to Division 1-12 in Docket No. 4780.)

Prepared by or under the supervision of: Robert Sheridan

Measurement & Verification Results

National Grid – Putnam Pike April 2016 to September 2016

November 2016

This document contains Utilidata's measurement and verification analysis of National Grid's 38F3 and 38F5 feeders served by the Putnam Pike substation.

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Executive Summary

Utilidata is pleased to provide results of the measurement and verification analysis for National Grid's 38F3 and 38F5 feeders served by the Putnam Pike substation. The following table summarizes the results of the study, which took place from April 1, 2016 to September 30, 2016.

Putnam Pike substation – Feeder analysis

Metric	Feeder 38F3	Feeder 38F5
VVO Mode days	29	36
Non-VVO Mode days	59	52
Real CVR Factor (per unit)	1.48	1.54
Demand Reduction (%)	3.15	3.50
Voltage Reduction, Spatial Avg %	2.33	2.33
Voltage Leveling Improvement (basis volts)	0.45	0.95
VVO Regulator tap ops, phase mean (daily)	14.6	13.1
Non-VVO Regulator tap ops, phase mean (daily)	16.3	14.0

These results are consistent with loads generally comprising significant air conditioning and refrigeration. As expected, favorable summer season CVR factors consistent with such loads are confirmed by this analysis. Although the sample size is small given the limited number of qualified experimental time series records, the residual variances estimated in this analysis are consistent with those typically observed in distribution circuit loads. The tap operations rate remained basically flat; that is, the differences in tap rate are not statistically significant.

The following sections contain more information on the experiment and individual graphs for tap operations and voltage profiles on each feeder.

We will continue to collect data and provide additional updates as requested.

General Observations

The following are general observations about the test results.

(1) The CVR factors estimated for the subject circuits are consistent with those expected for circuits serving mixed residential and light commercial loads in a temperate season; the demand response to reduced voltage clearly indicates the presence of air conditioning and mechanical refrigeration in the served load.

(2) The availability of integral signal records is marginal to average, because system operations were subject to some interruptions due to telemetry failures; energy conservation is optimized when such interruptions are rare.

(3) The residual variance in the stated estimates is typical for distribution circuits.

(4) There is no evidence of distinct demand processes in this experiment.

(5) The dependence of demand on ambient temperature for the subject circuits manifested minimal temperature dependence in the heating demand regime. The demand process, instead, behaved almost as expected for the neutral regime. This effect does not degrade the analysis in any way, since the procedure naturally accommodates such variations.

(6) Loads for which the estimated CVR factors exceed unity will generally manifest further efficiency improvements with additional voltage reductions; Utilidata anticipates that this is the case for the loads served by the subject circuits.

(7) Realized voltage reductions, and the consequent demand reductions, are not uniform across phases in either of the circuits under study. Circuit voltage uniformity was improved by AdaptiVolt; refer to the per-phase voltage graphics for details.

(8) Estimated demand profiles for circuit 38F3 were summed post-regression, since demand metering by phase was reported. Estimated demand profiles for circuit 38F5 were computed using three-phase aggregate demand signals as reported.

Analyst Notes

The following are notes about the test prepared by the Utilidata analyst.

(1) The conservation performance results are calculated using the analysis method outlined Automated CVR Protocol # 1. This method implements the MCD robust regression procedure across ensembles of time series of demand measurements and, in its present formulation, requires that each member record of an ensemble comprise a full 24-hour operational record. Any record in which either the CVR operation was interrupted or the data recordings were defective for any reason are excluded from these analyses. Regime voltages are estimated by minimizing the mutual summation of the Euclidean distances between all the voltage observations in each regime. This estimate is known as the L1 median.

(2) Time series records were smoothed prior to ensemble selection and regression. The smoothing procedure preserves the signal mean over the smoothing interval such that the signal of interest is not biased. (*Smoothing and differentiation by simplified least squares procedures,* Abraham Savitzky and M. J. E. Golay, Analytical Chemistry, Vol. 36, No. 8 [July 1964], pp. 1627–1639*)*)

(3) All reported demand profiles (real, reactive, current) are compensated for ambient temperature as specified in Protocol # 1. These profiles therefore represent the expected demands, not to be confused with the demands recorded for any individual day during the experiment.

(4) Weekend demands are excluded from the present analysis; the distinctly different consumer weekend behavior results in an identifiably different demand process, which must be excluded in accordance with the requirements of Protocol #1.

Feeder 38F3 Results

This section contains graphs illustrating the results of the measurement and verification analysis for the 38F3 feeder served by the Putnam Pike substation.

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Feeder 38F3: Median Circuit Voltage Profiles	9
Feeder 38F3: Median Voltage Differential Profiles (Phase Avg)	10
Feeder 38F3: Robust Estimated Real Demand Profiles	11
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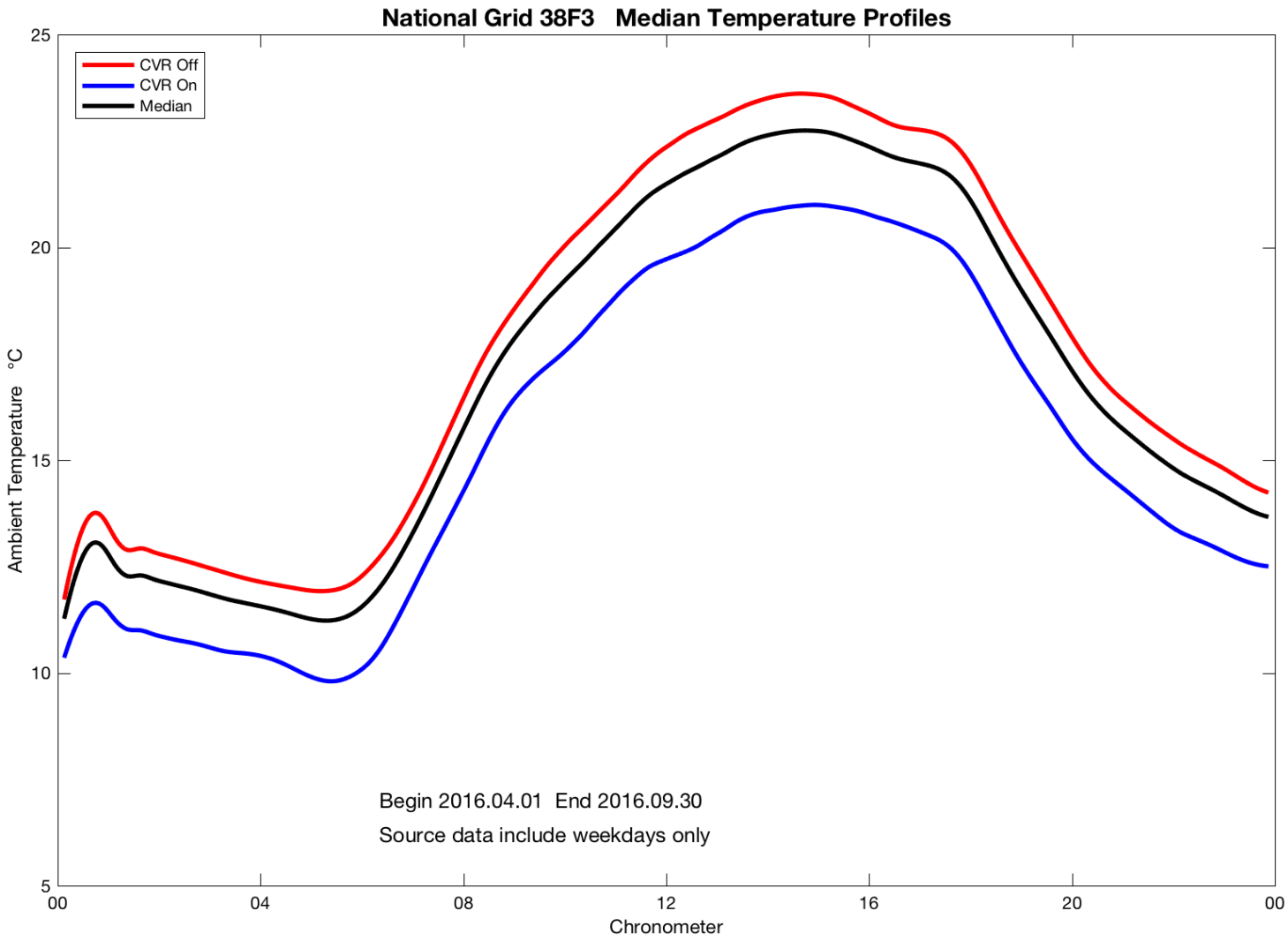
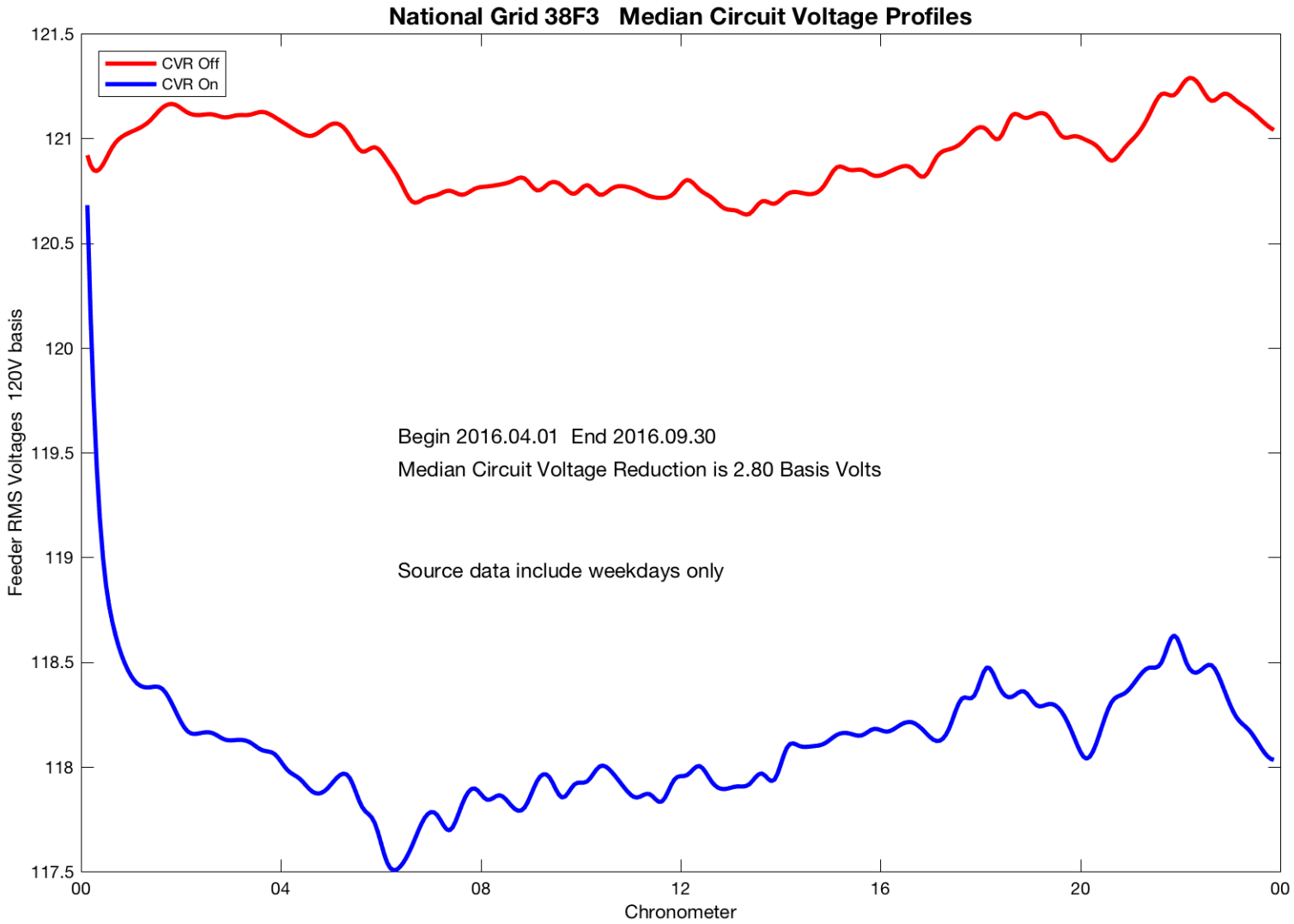
Feeder 38F3: Median Temperature Profiles

Graph 1



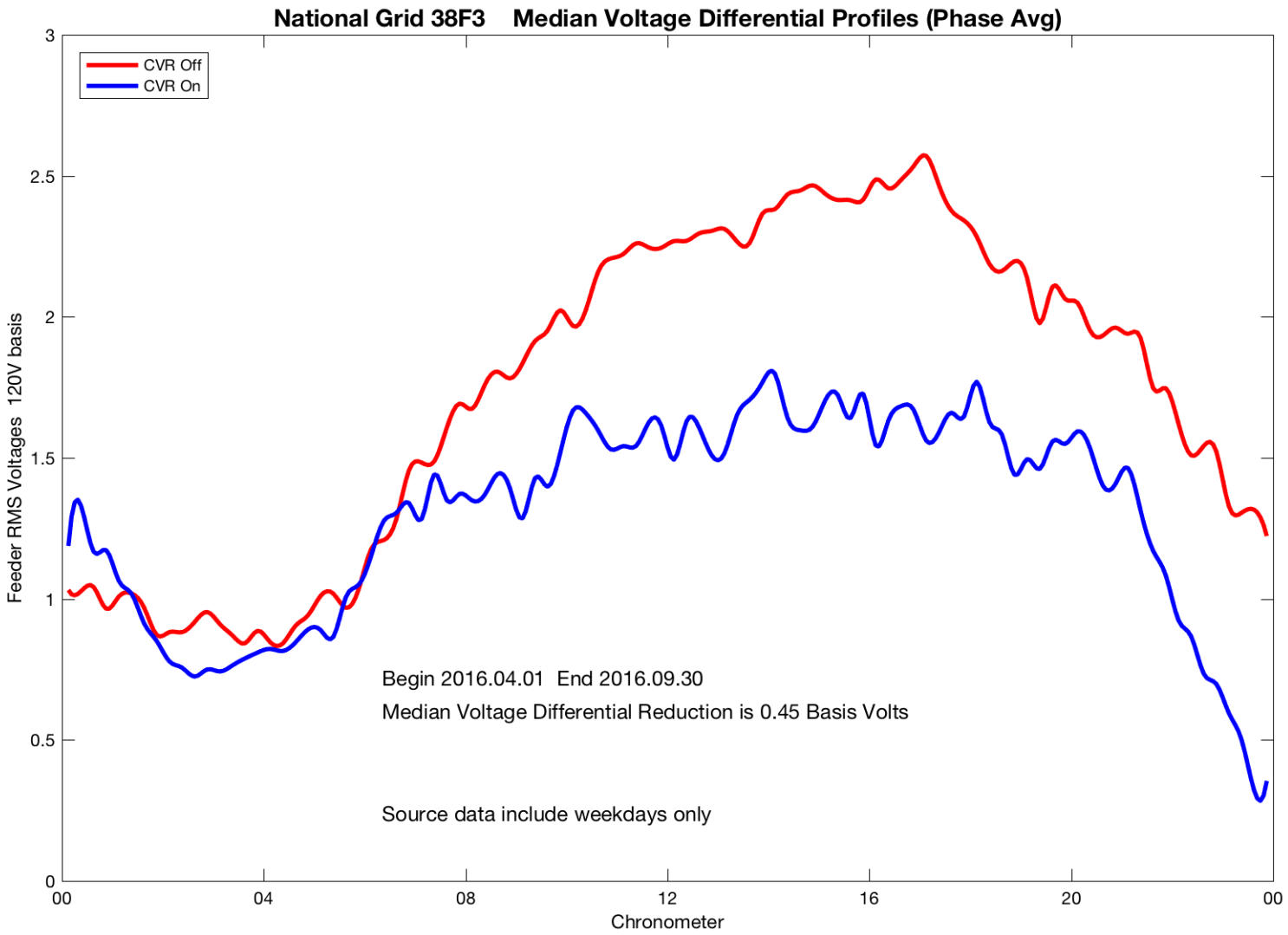
Feeder 38F3: Median Circuit Voltage Profiles

Graph 2



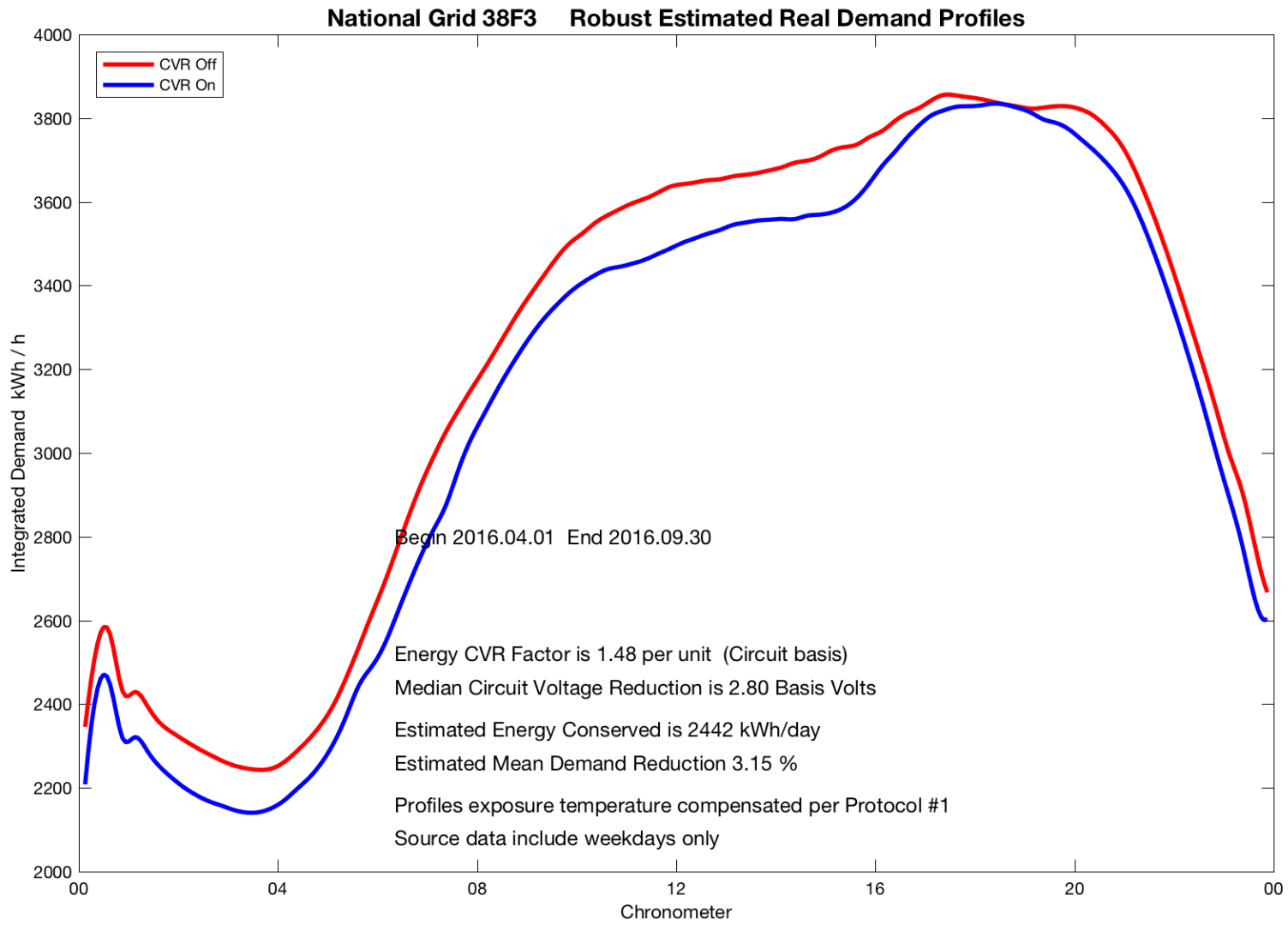
Feeder 38F3: Median Voltage Differential Profiles (Phase Avg)

Graph 3



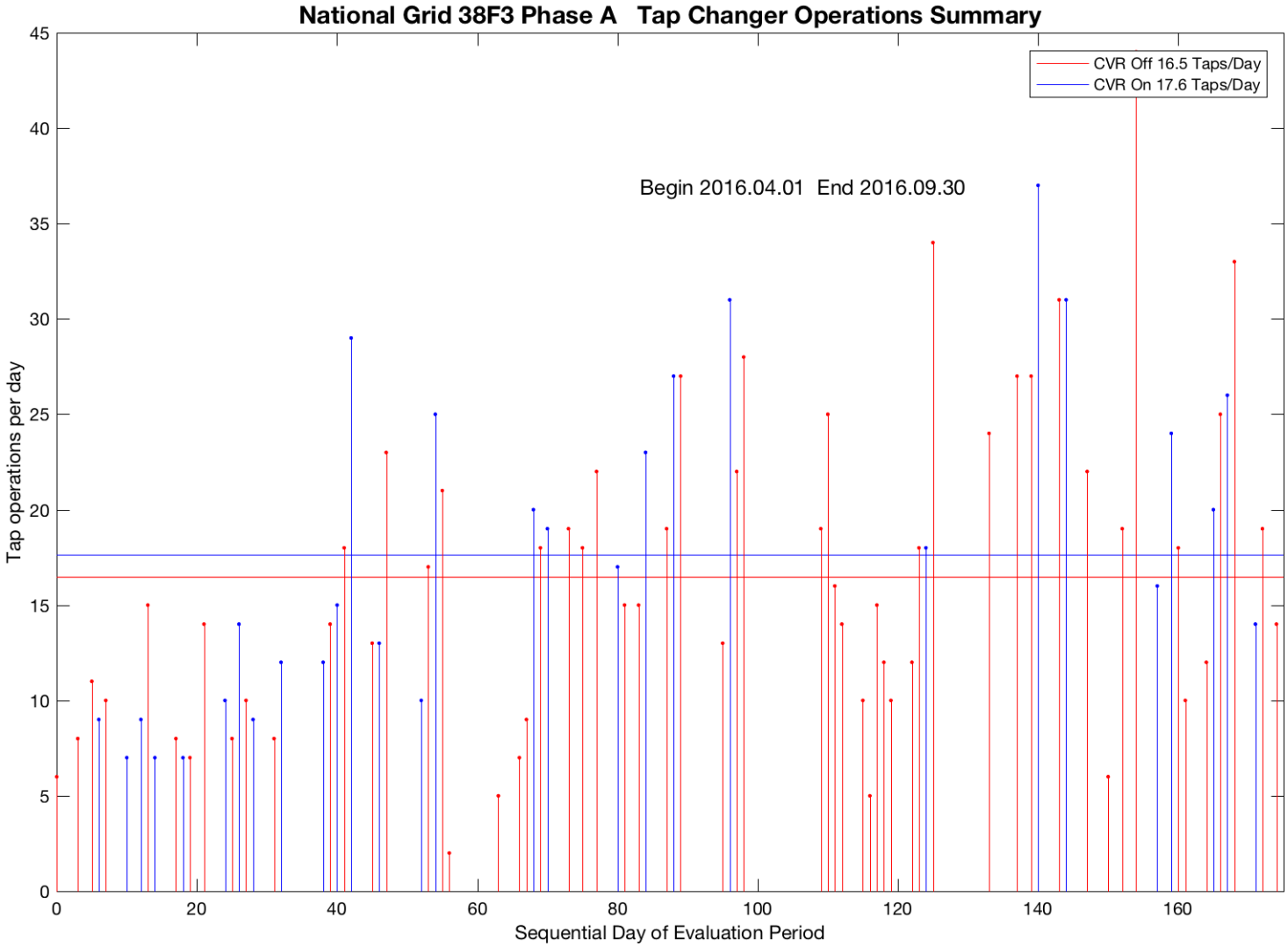
Feeder 38F3: Robust Estimated Real Demand Profiles

Graph 4



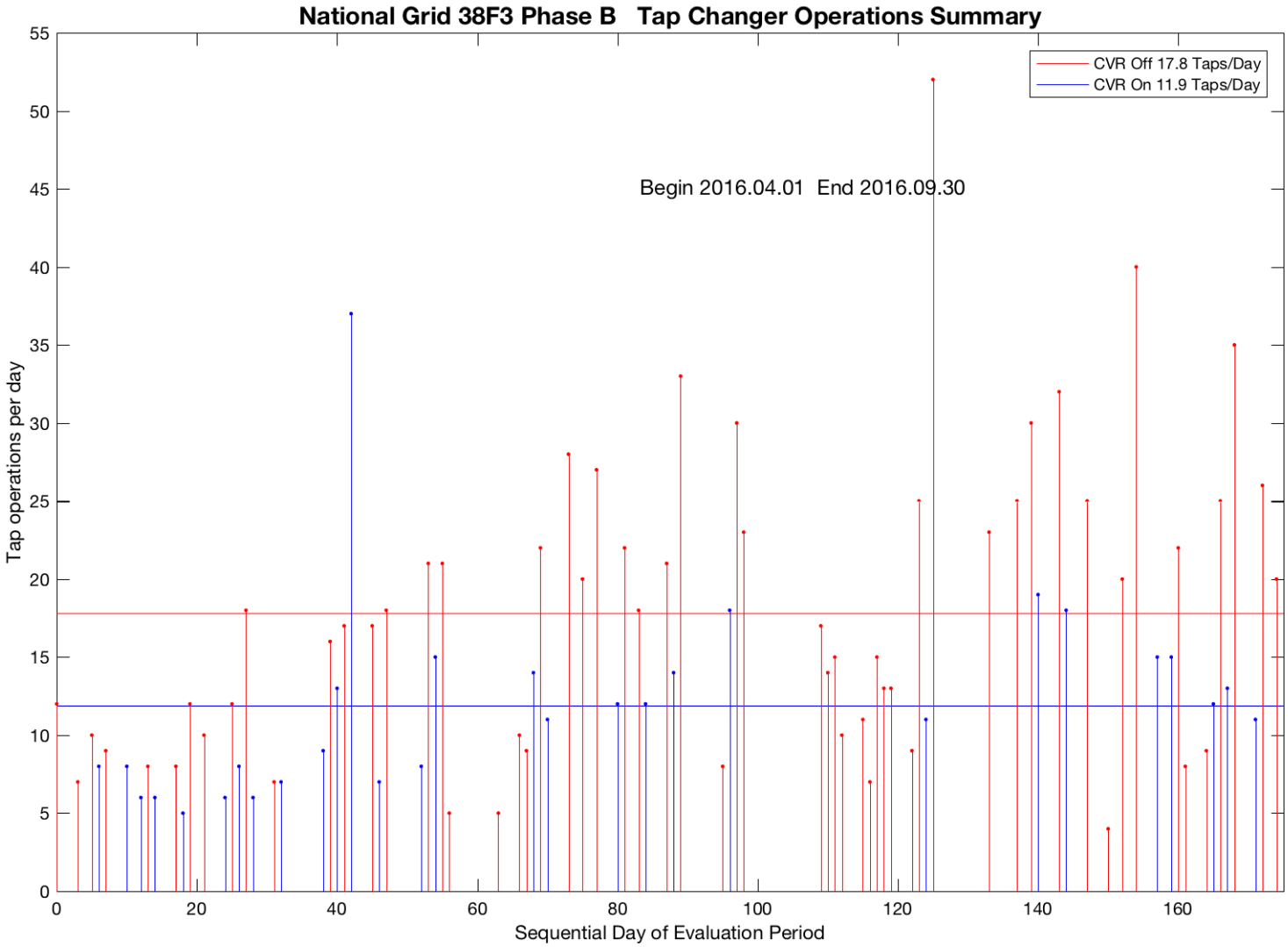
Feeder 38F3: Phase A – Tap Changer Operations Summary

Graph 5



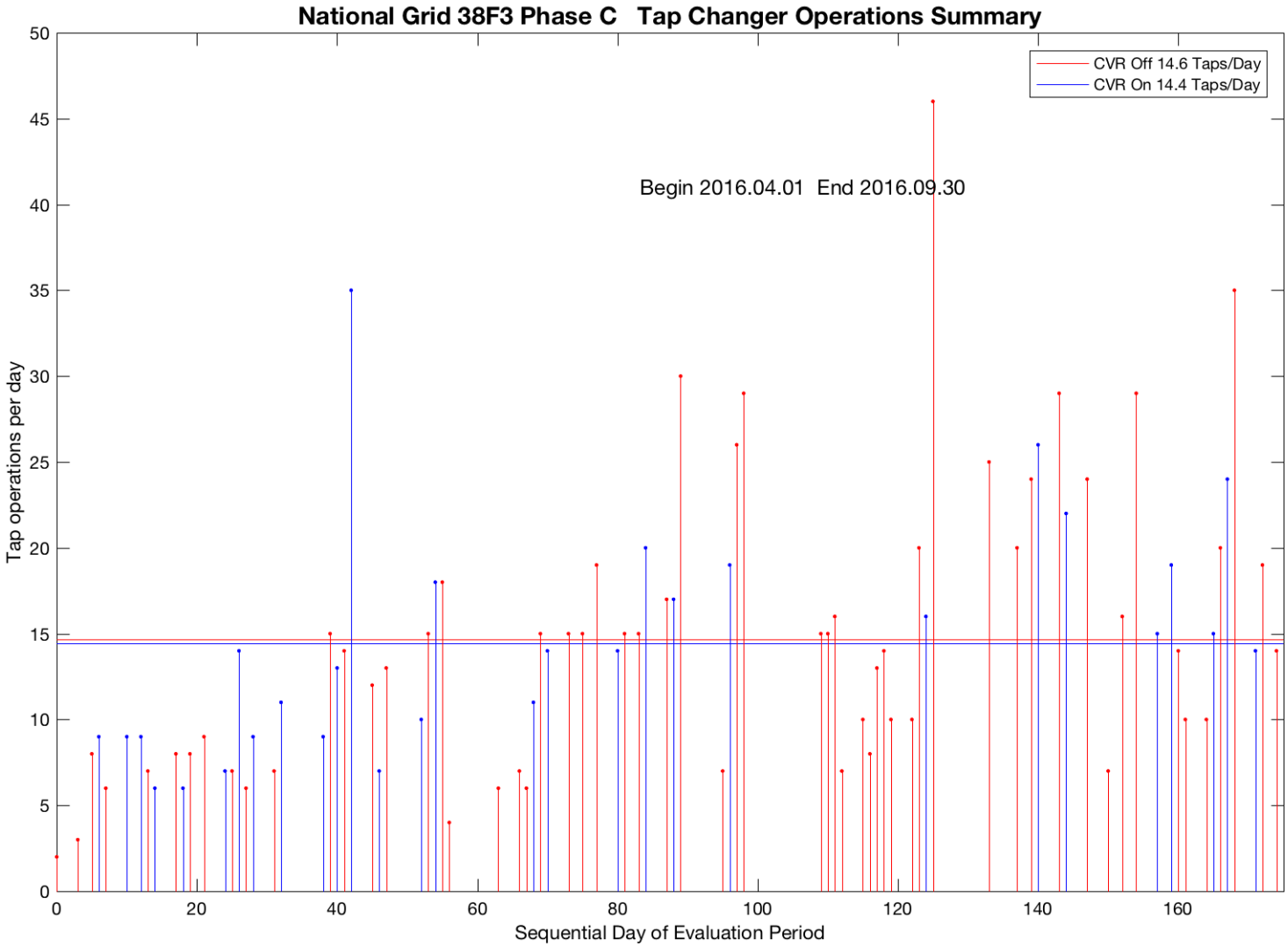
Feeder 38F3: Phase B – Tap Changer Operations Summary

Graph 6



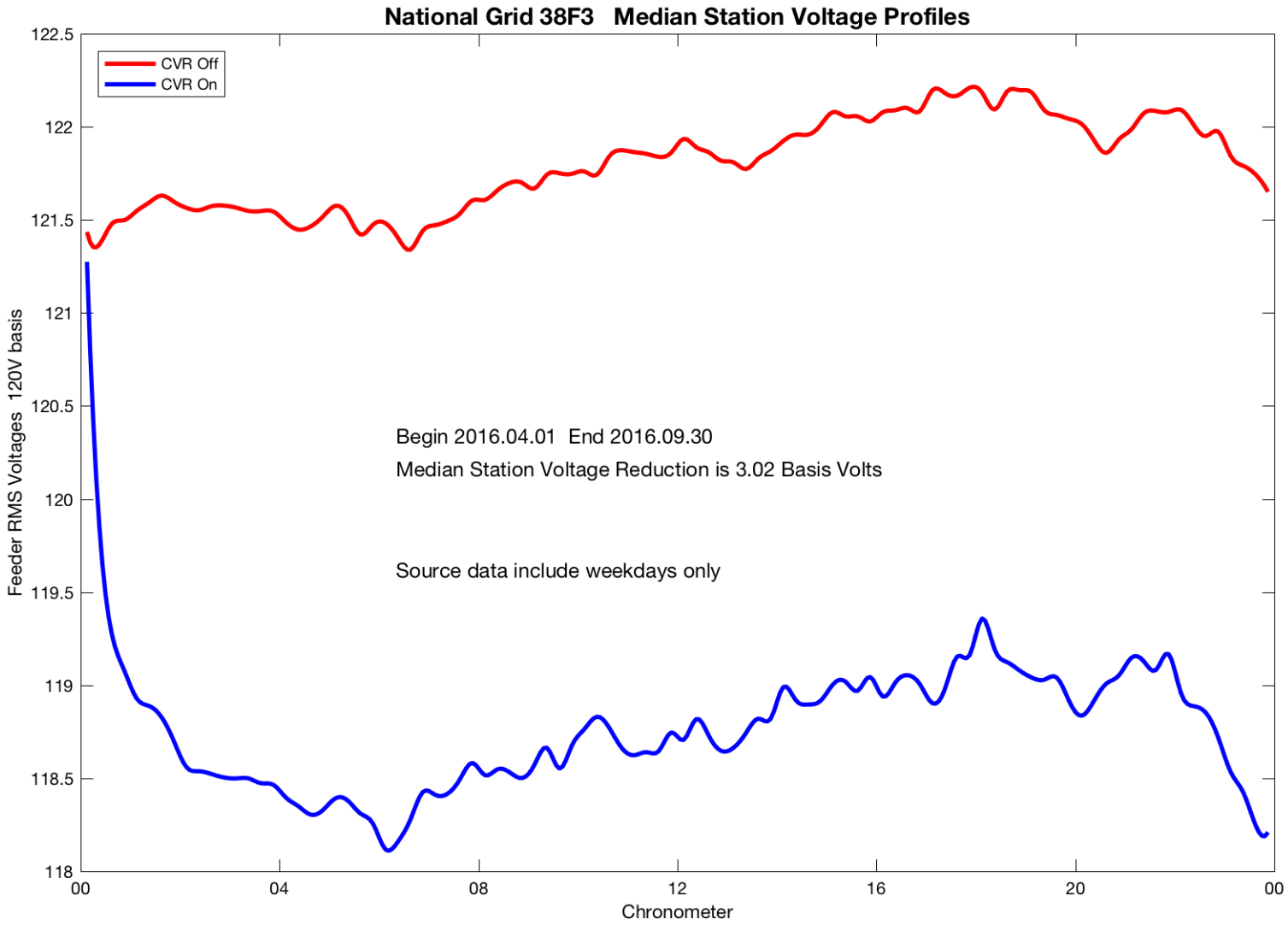
Feeder 38F3: Phase C – Tap Changer Operations Summary

Graph 7



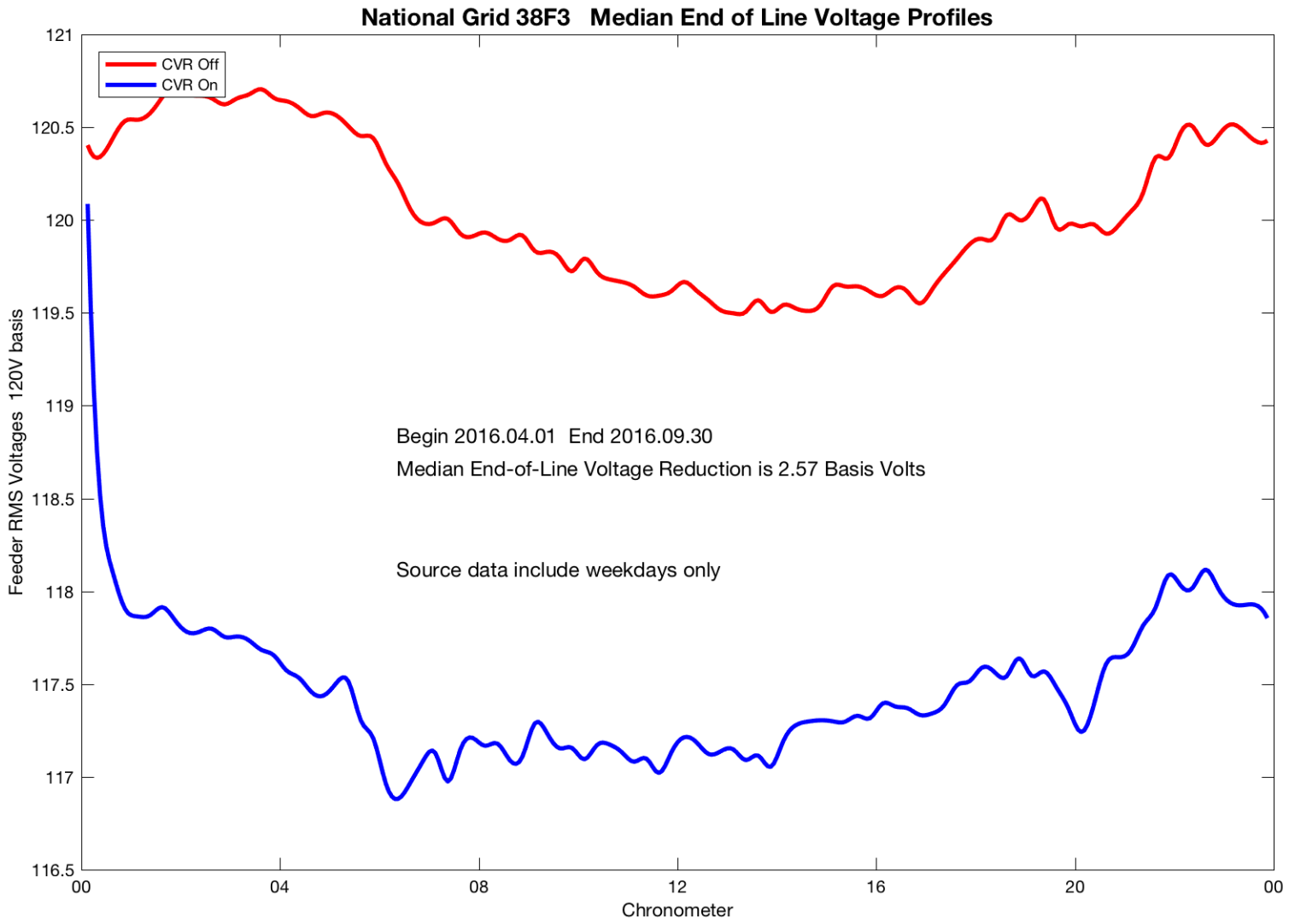
Feeder 38F3: Median Station Voltage Profiles

Graph 8



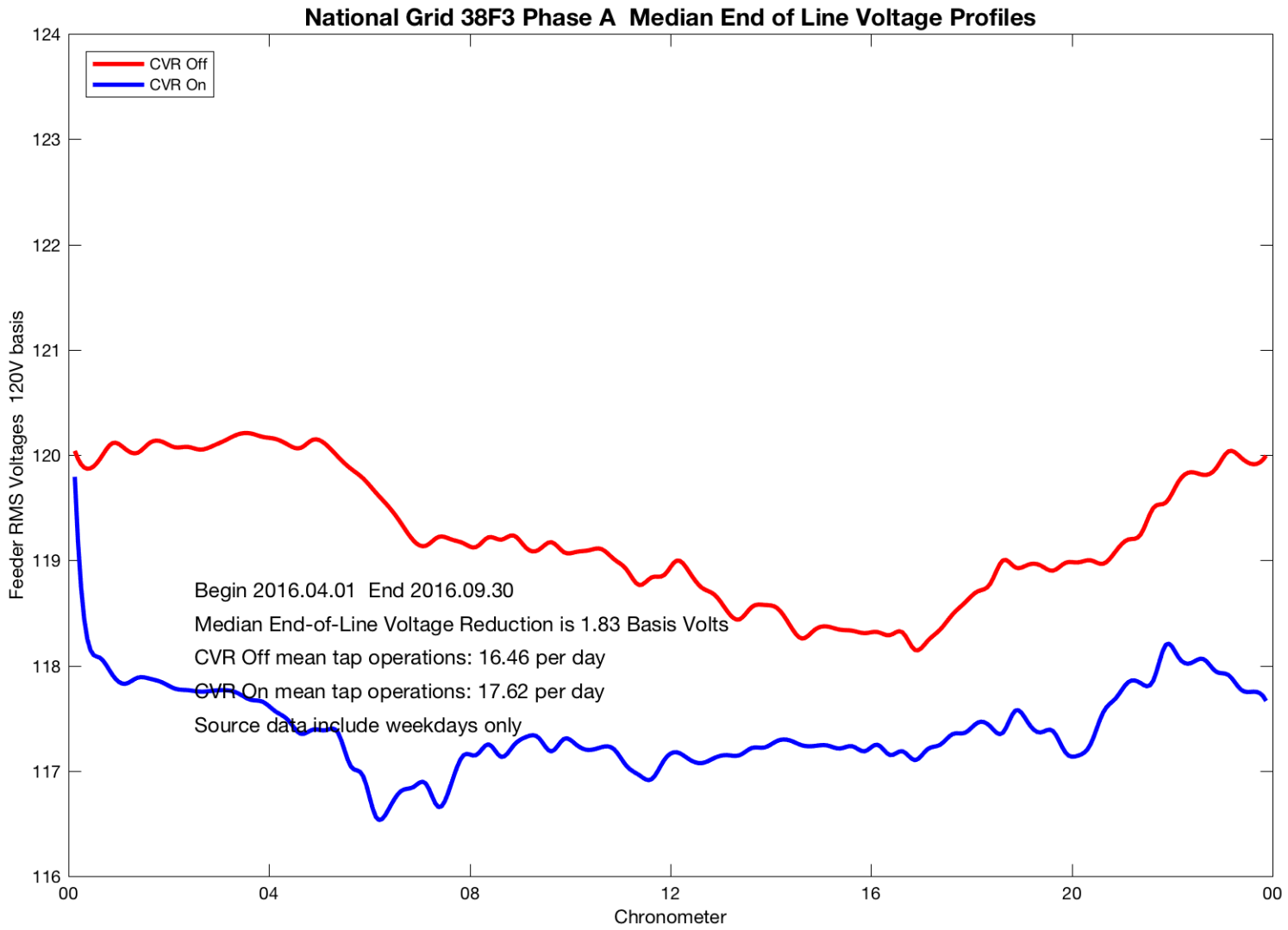
Feeder 38F3: Median End of Line Voltage Profiles (Phase Avg)

Graph 9



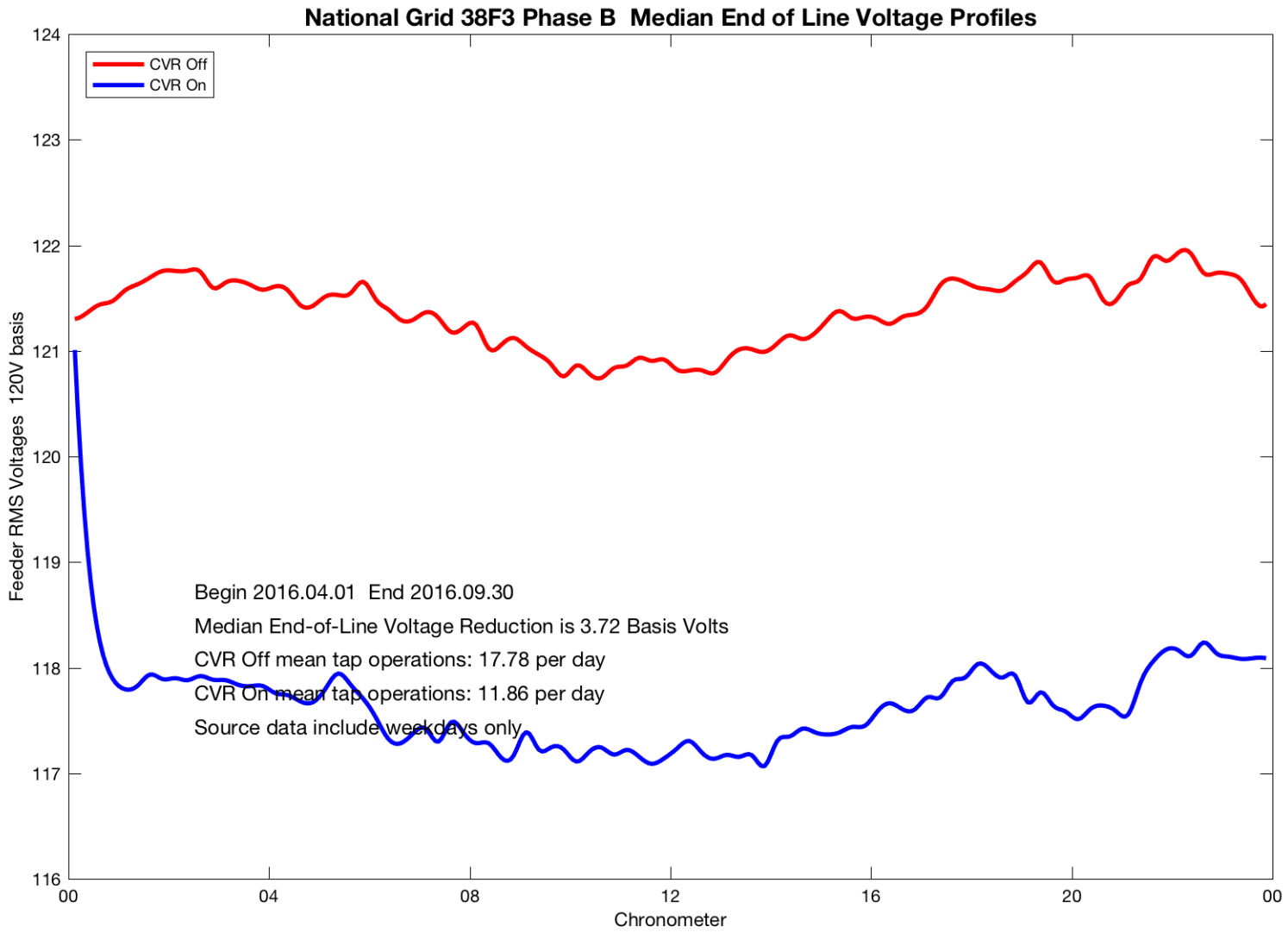
Feeder 38F3: Phase A – Median End of Line Voltage Profiles

Graph 10



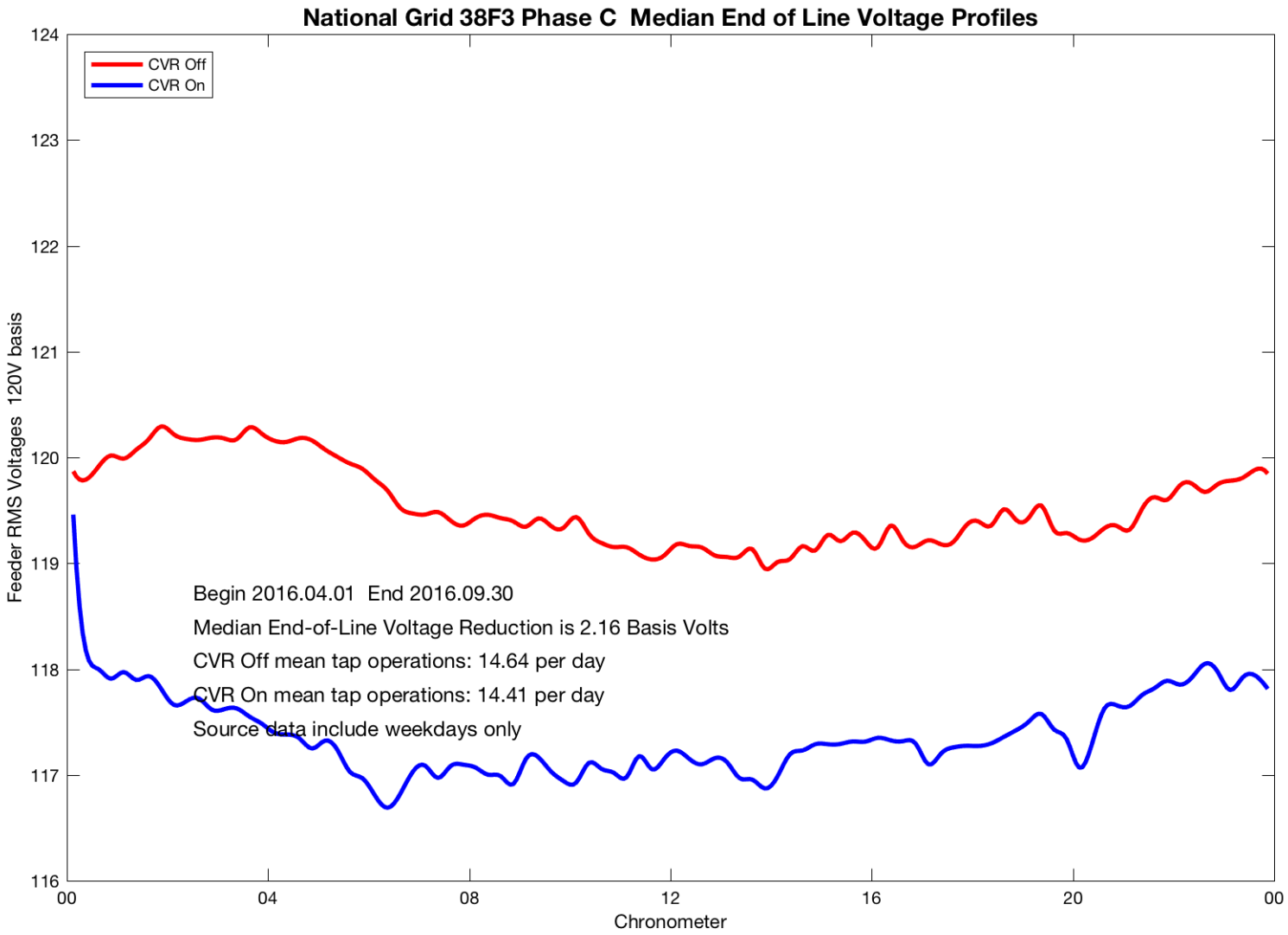
Feeder 38F3: Phase B – Median End of Line Voltage Profiles

Graph 11



Feeder 38F3: Phase C – Median End of Line Voltage Profiles

Graph 12



Feeder 38F5 Results

This section contains graphs illustrating the results of the measurement and verification analysis for the 38F5 feeder served by the Putnam Pike substation.

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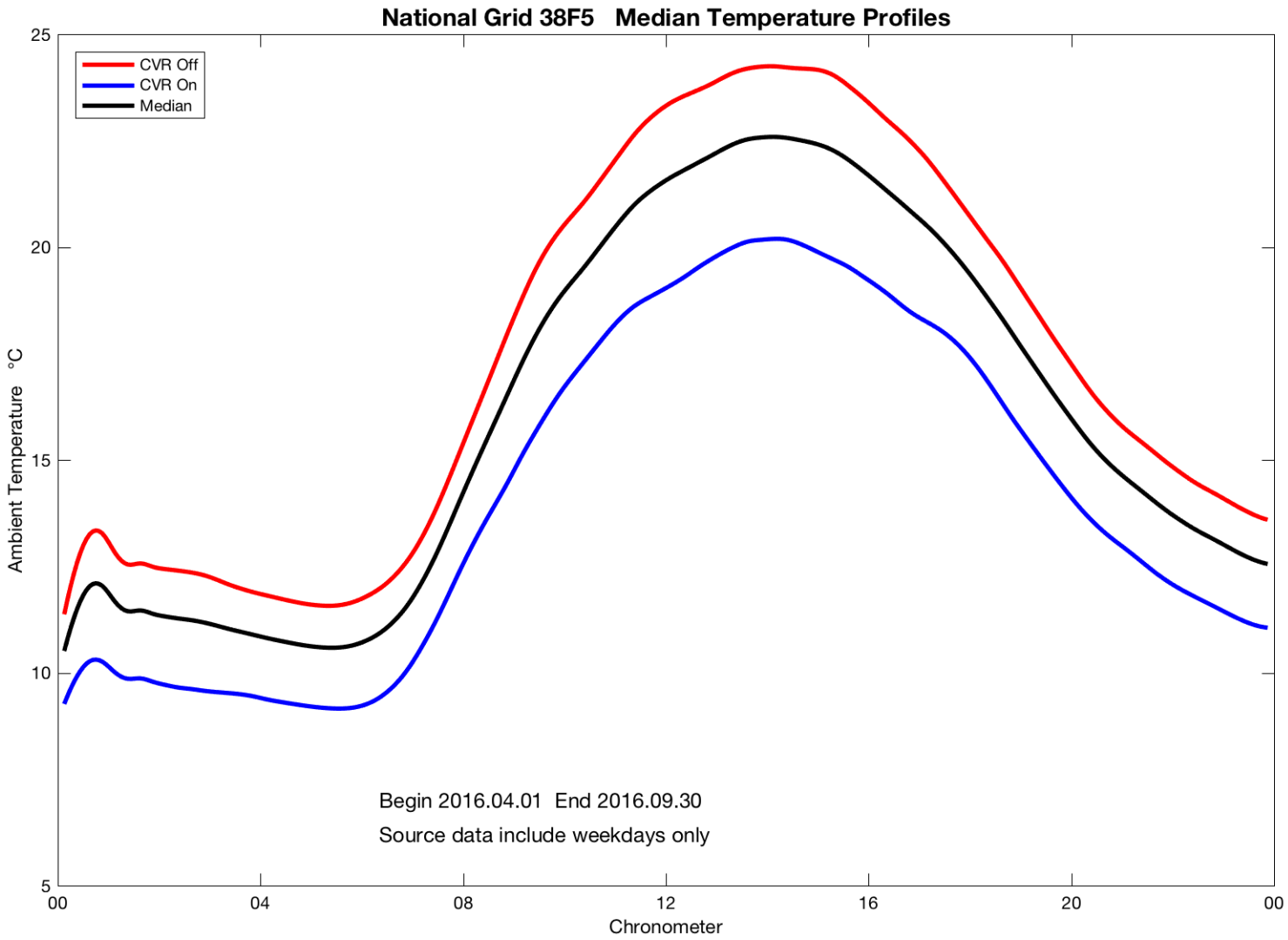
Feeder 38F5: Phase A – Tap Changer Operations Summary	25
Feeder 38F5: Phase B – Tap Changer Operations Summary	26
Feeder 38F5: Phase C – Tap Changer Operations Summary	27
Feeder 38F5: Median Station Voltage Profiles	28
Feeder 38F5: Median End of Line Voltage Profiles (Phase Avg)	29
Feeder 38F5: Phase A – Median End of Line Voltage Profiles	30
Feeder 38F5: Phase B – Median End of Line Voltage Profiles	31
Feeder 38F5: Phase C – Median End of Line Voltage Profiles	32

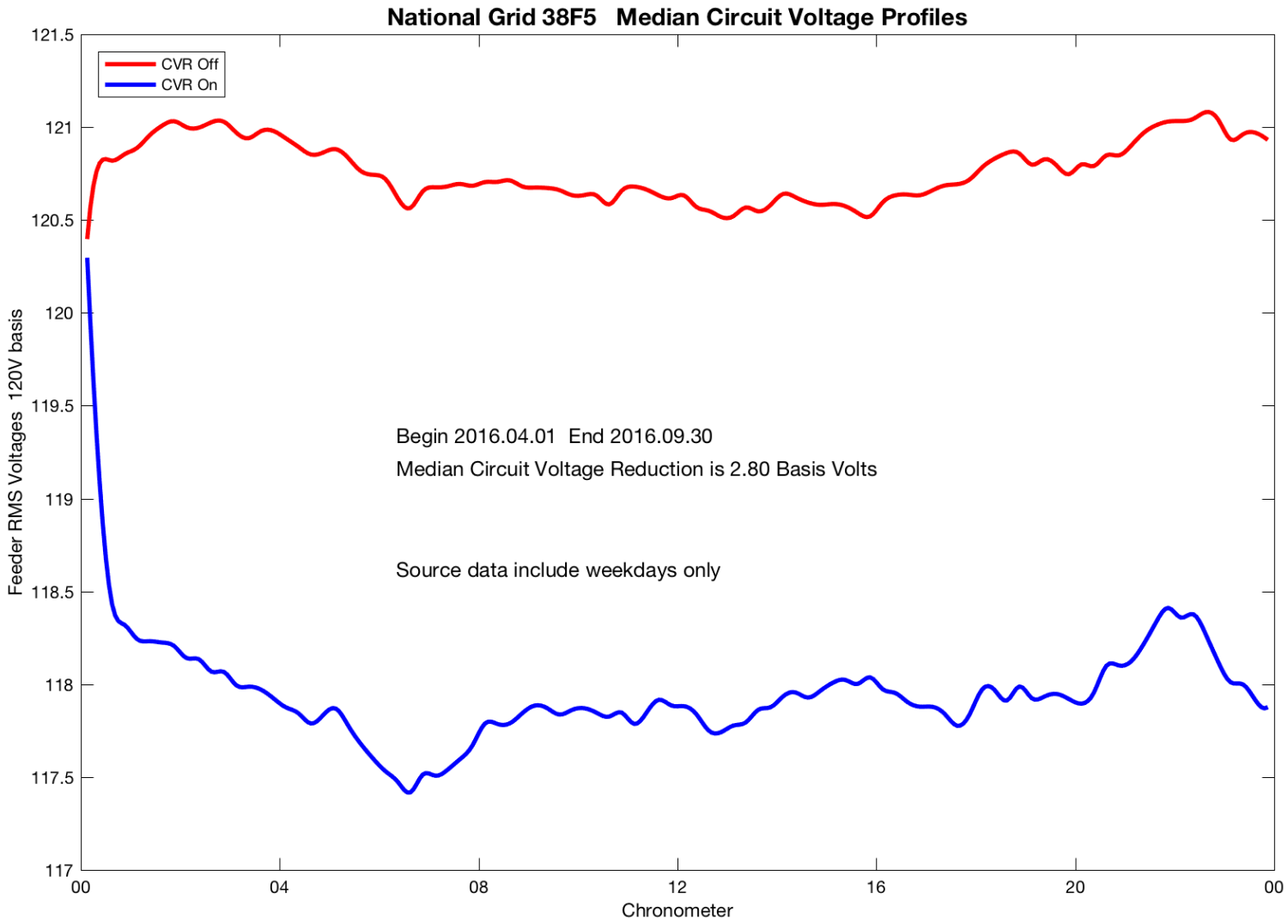
Feeder 38F5: Median Temperature Profiles

Graph 13



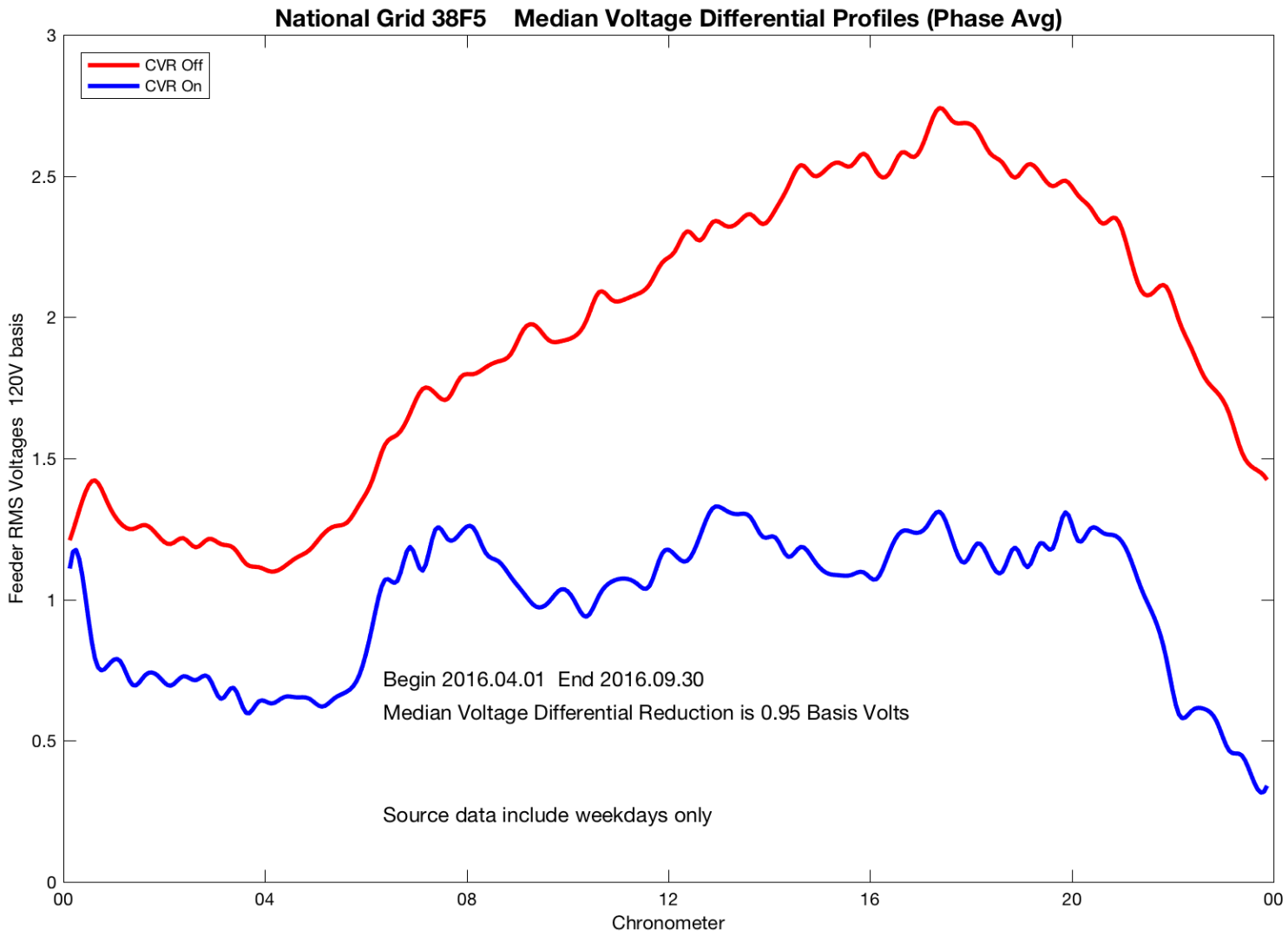
Feeder 38F5: Median Circuit Voltage Profiles

Graph 14



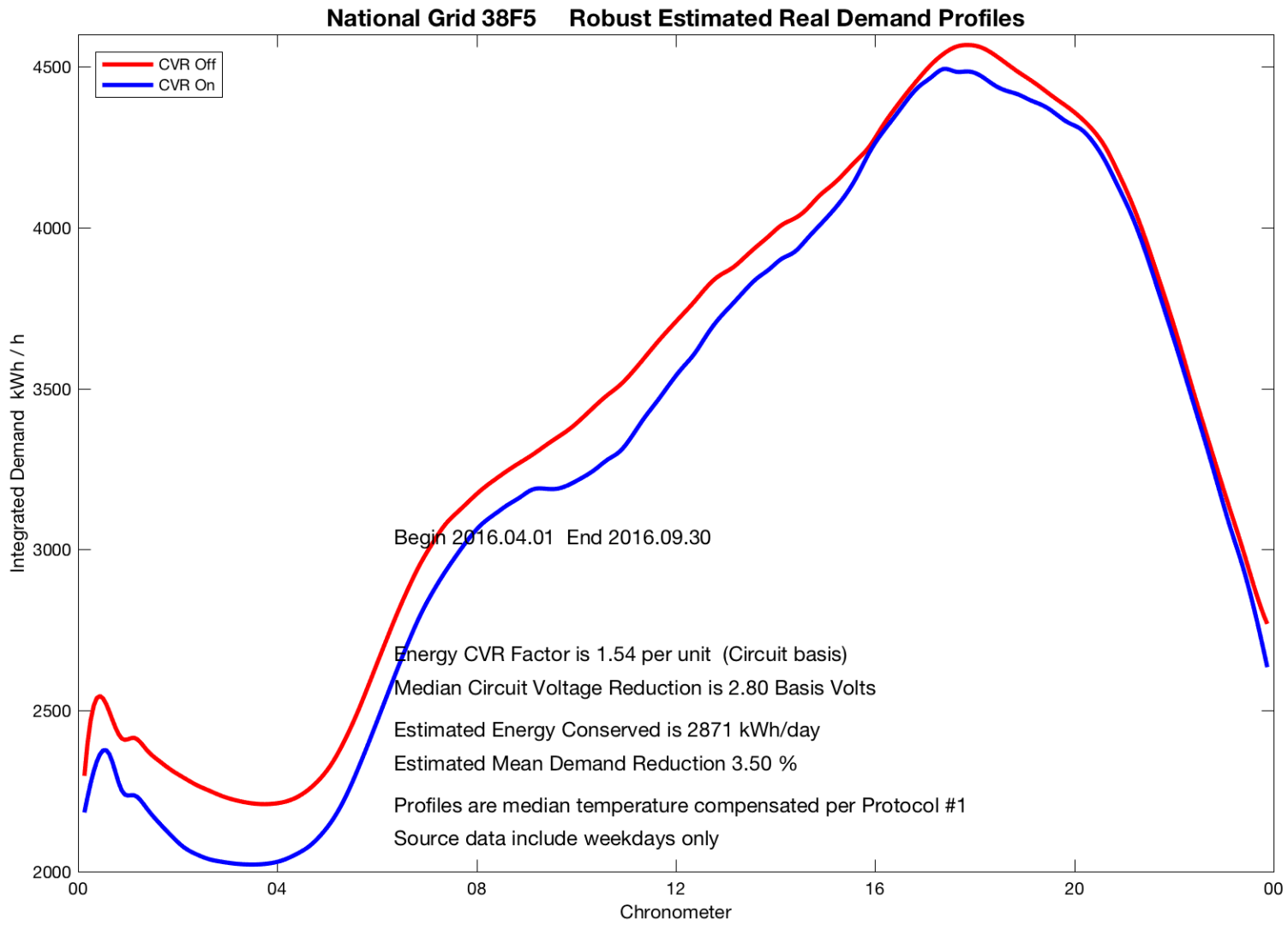
Feeder 38F5: Median Voltage Differential Profiles (Phase Avg)

Graph 15



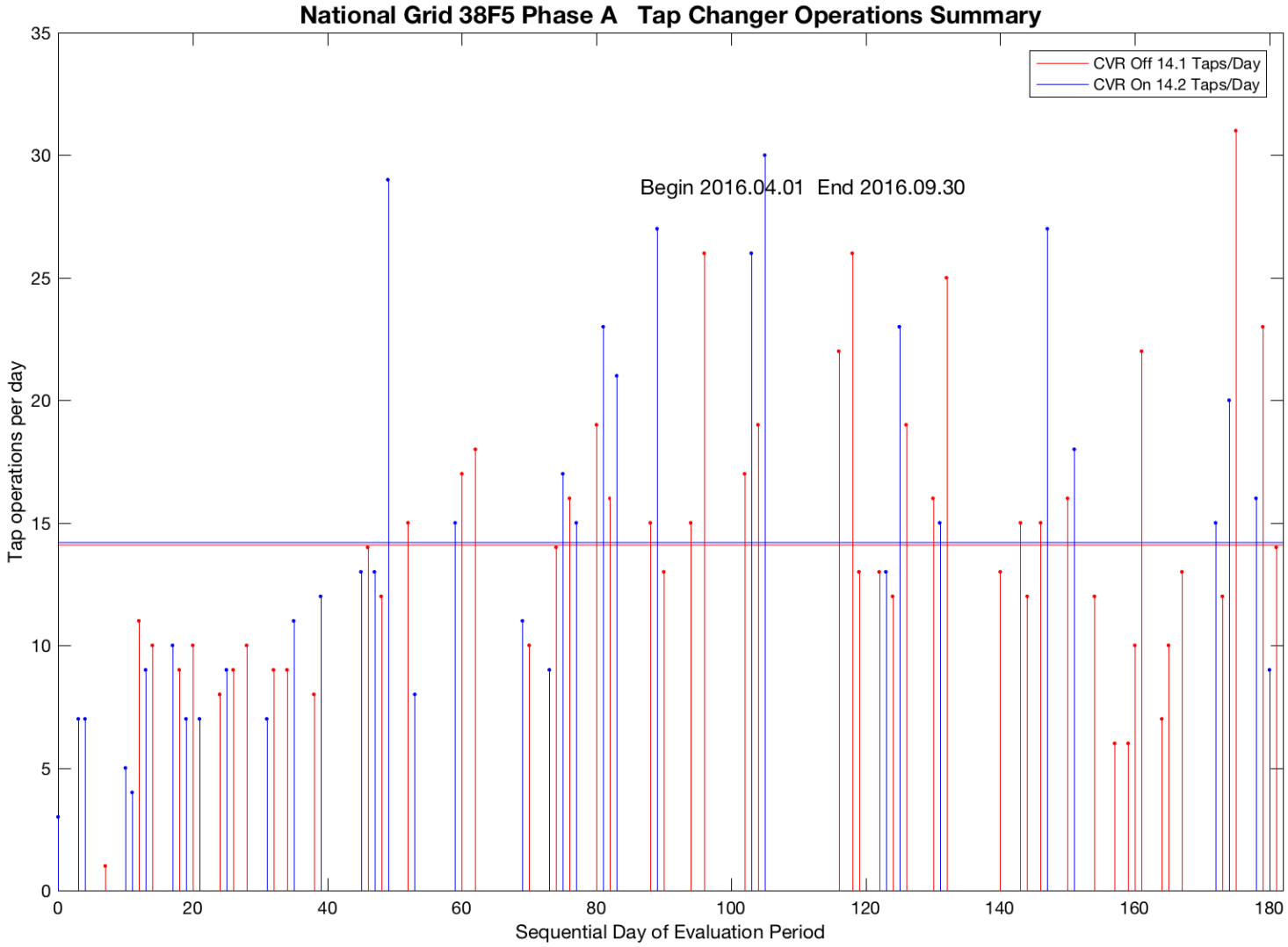
Feeder 38F5: Robust Estimated Real Demand Profiles

Graph 16



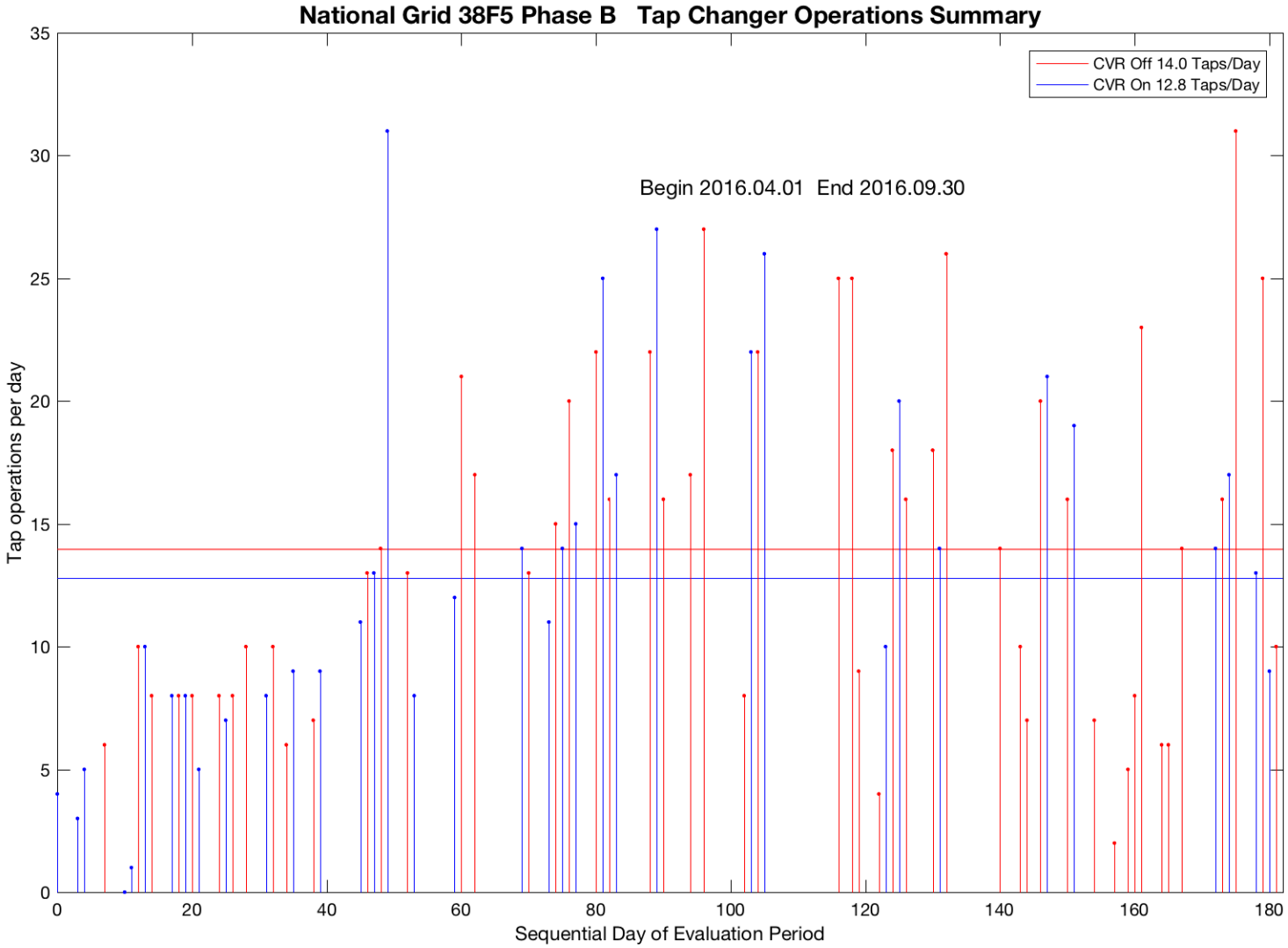
Feeder 38F5: Phase A – Tap Changer Operations Summary

Graph 17



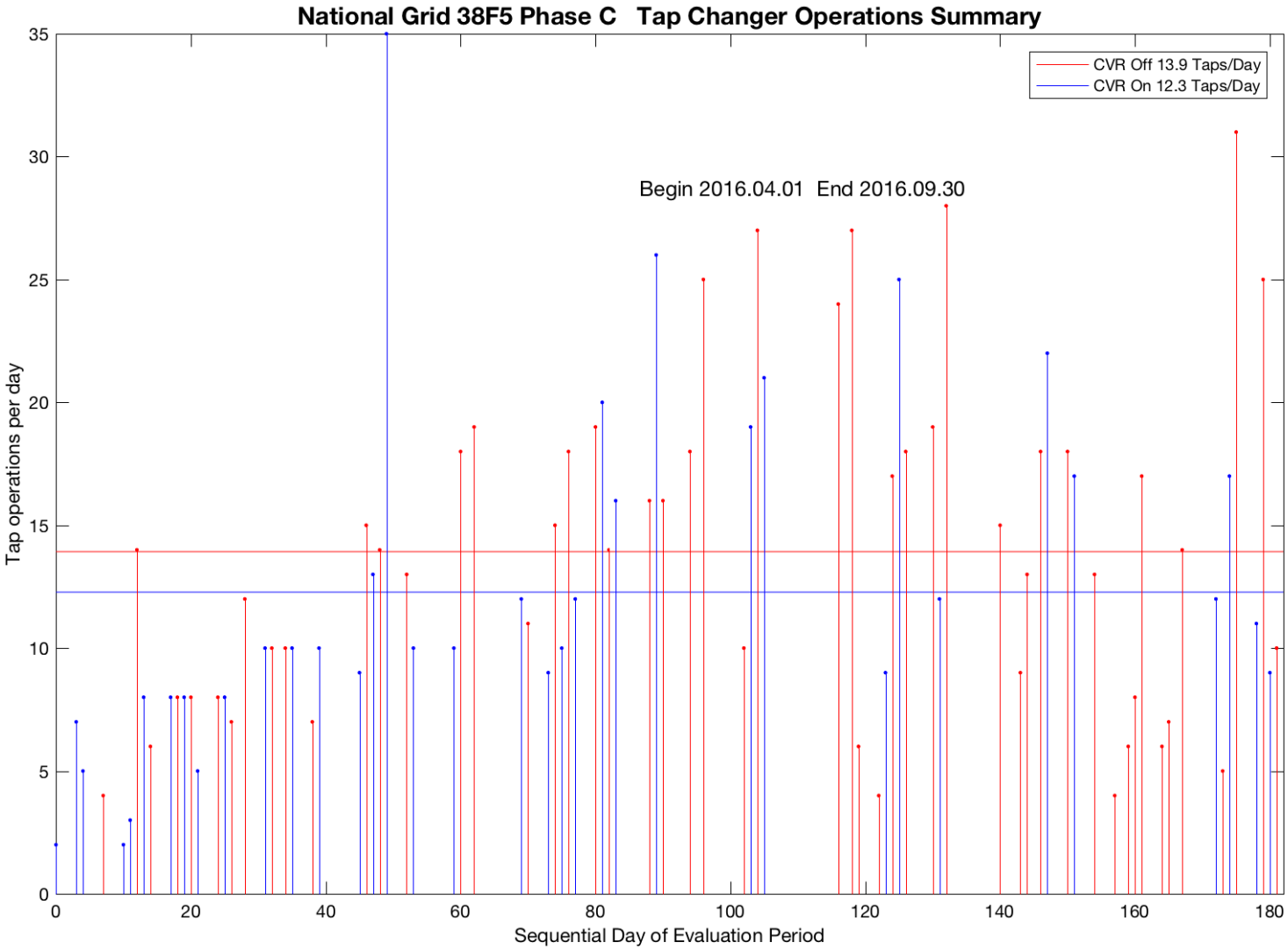
Feeder 38F5: Phase B – Tap Changer Operations Summary

Graph 18



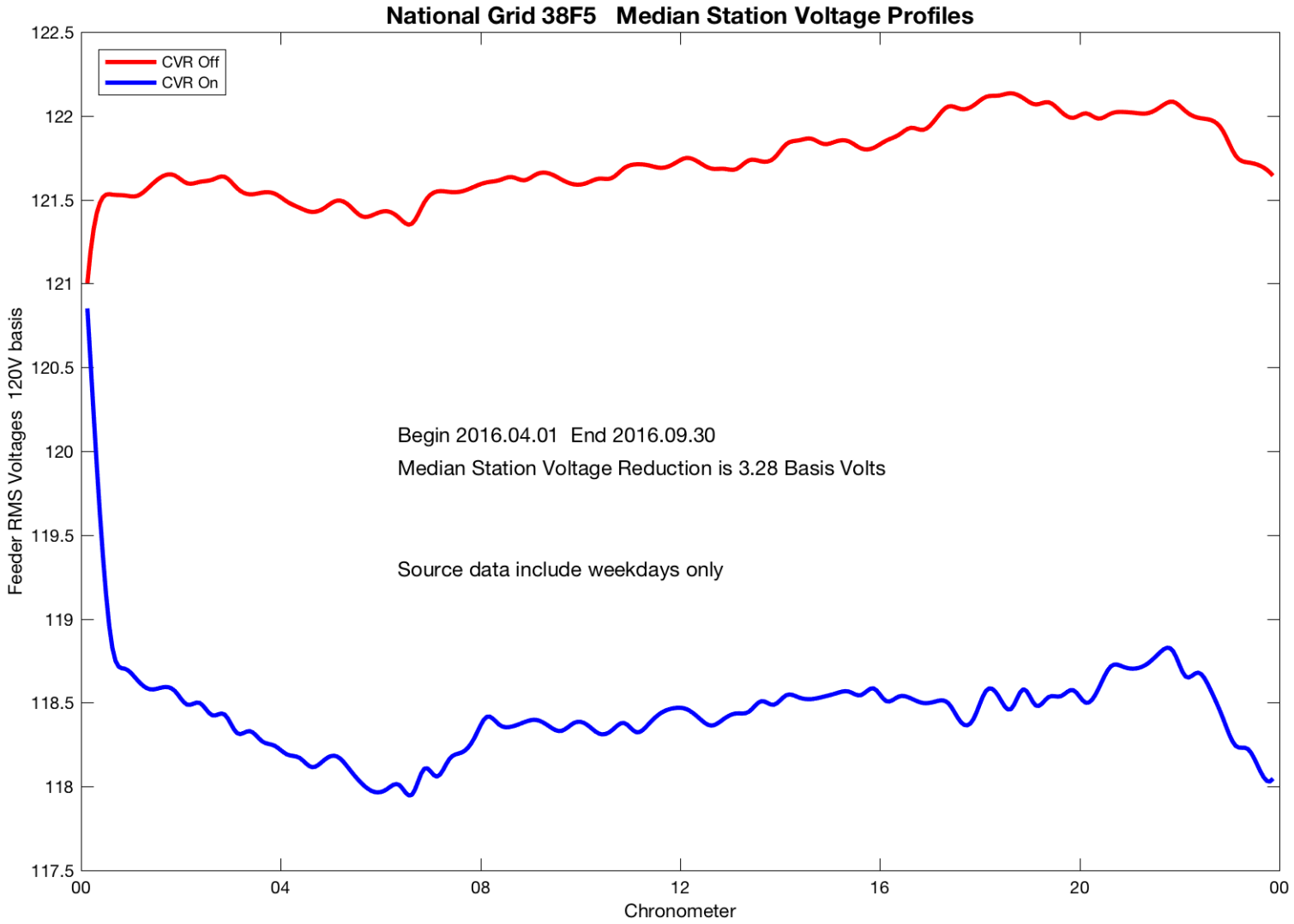
Feeder 38F5: Phase C – Tap Changer Operations Summary

Graph 19



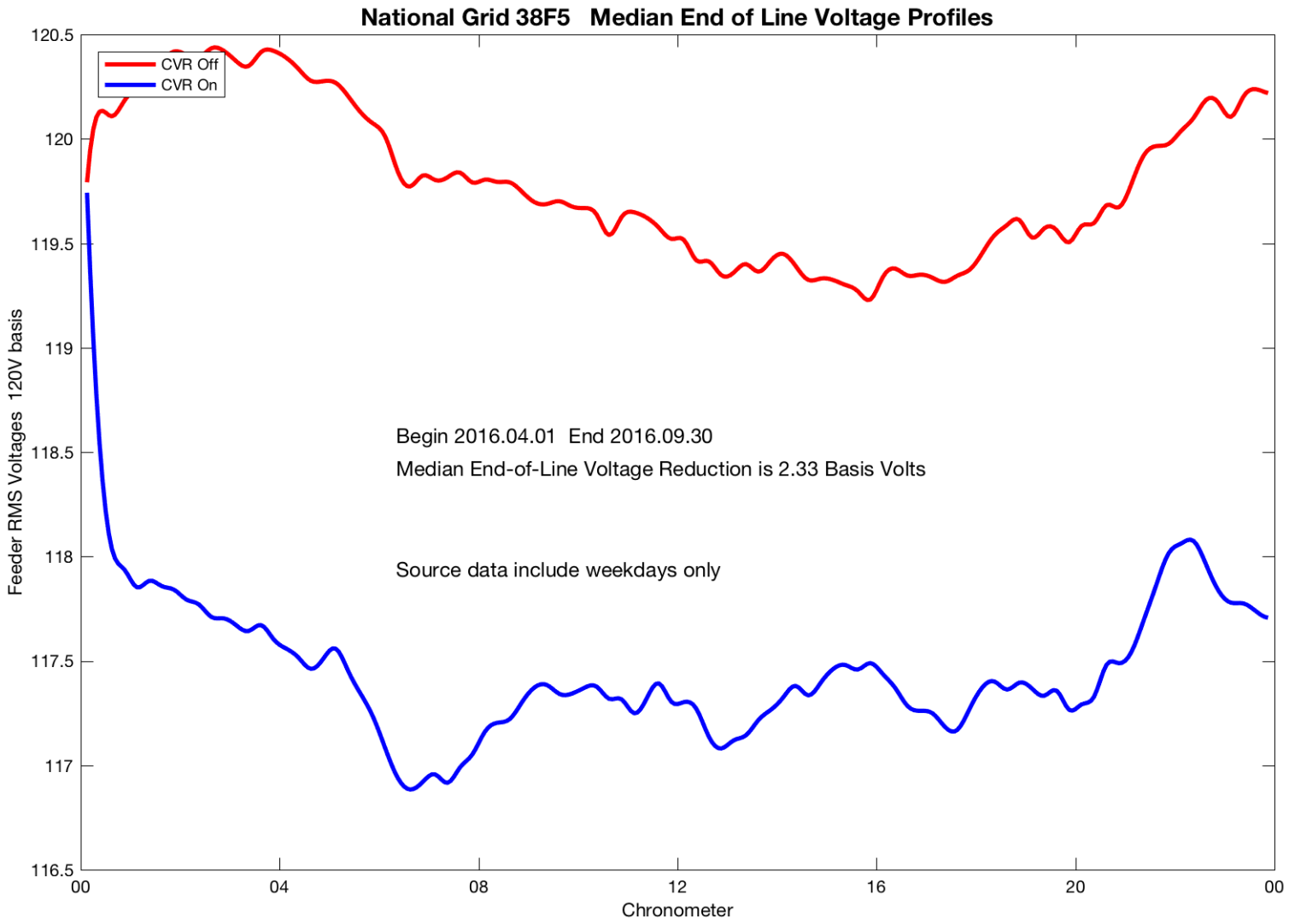
Feeder 38F5: Median Station Voltage Profiles

Graph 20



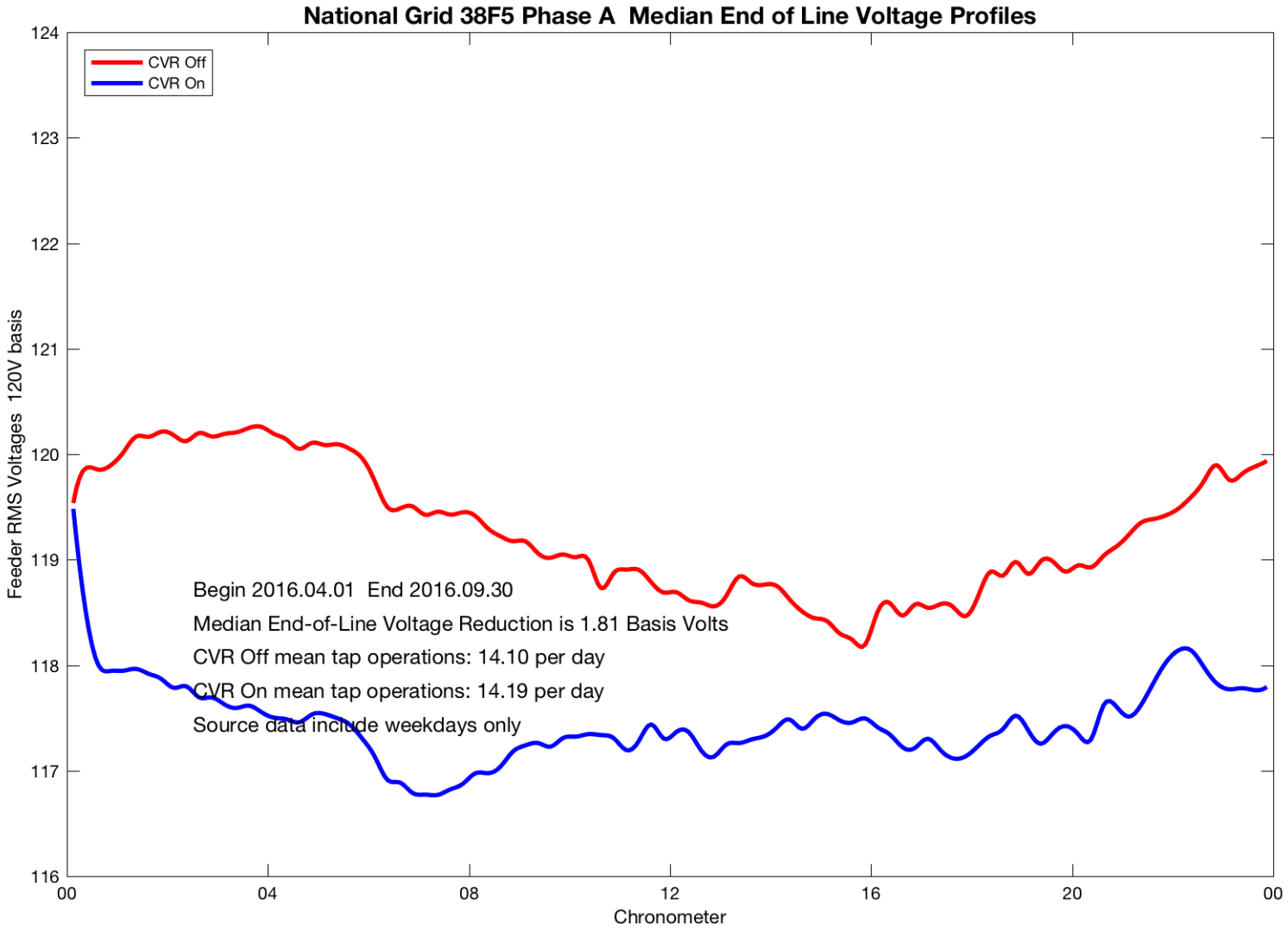
Feeder 38F5: Median End of Line Voltage Profiles (Phase Avg)

Graph 21



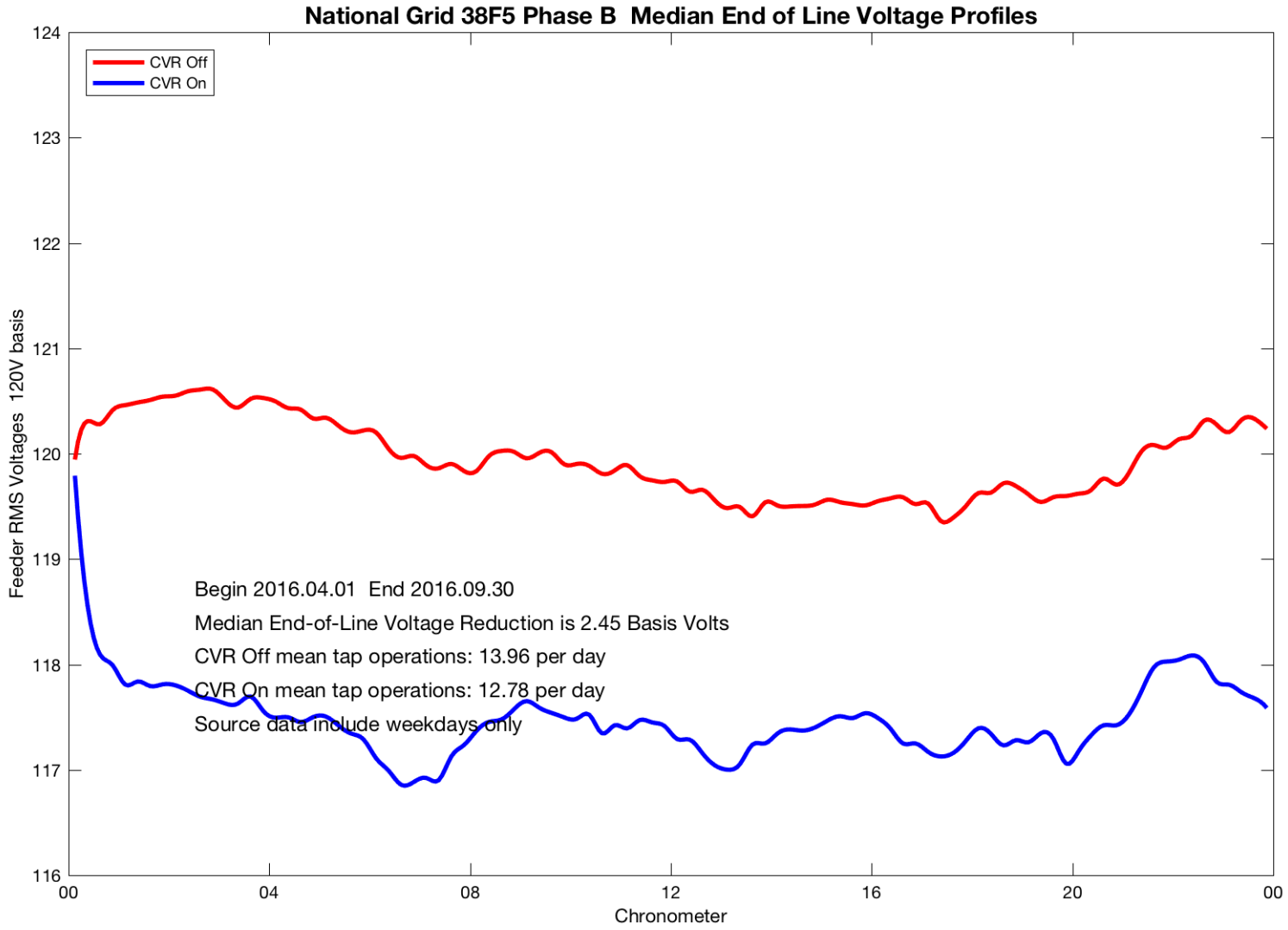
Feeder 38F5: Phase A – Median End of Line Voltage Profiles

Graph 22



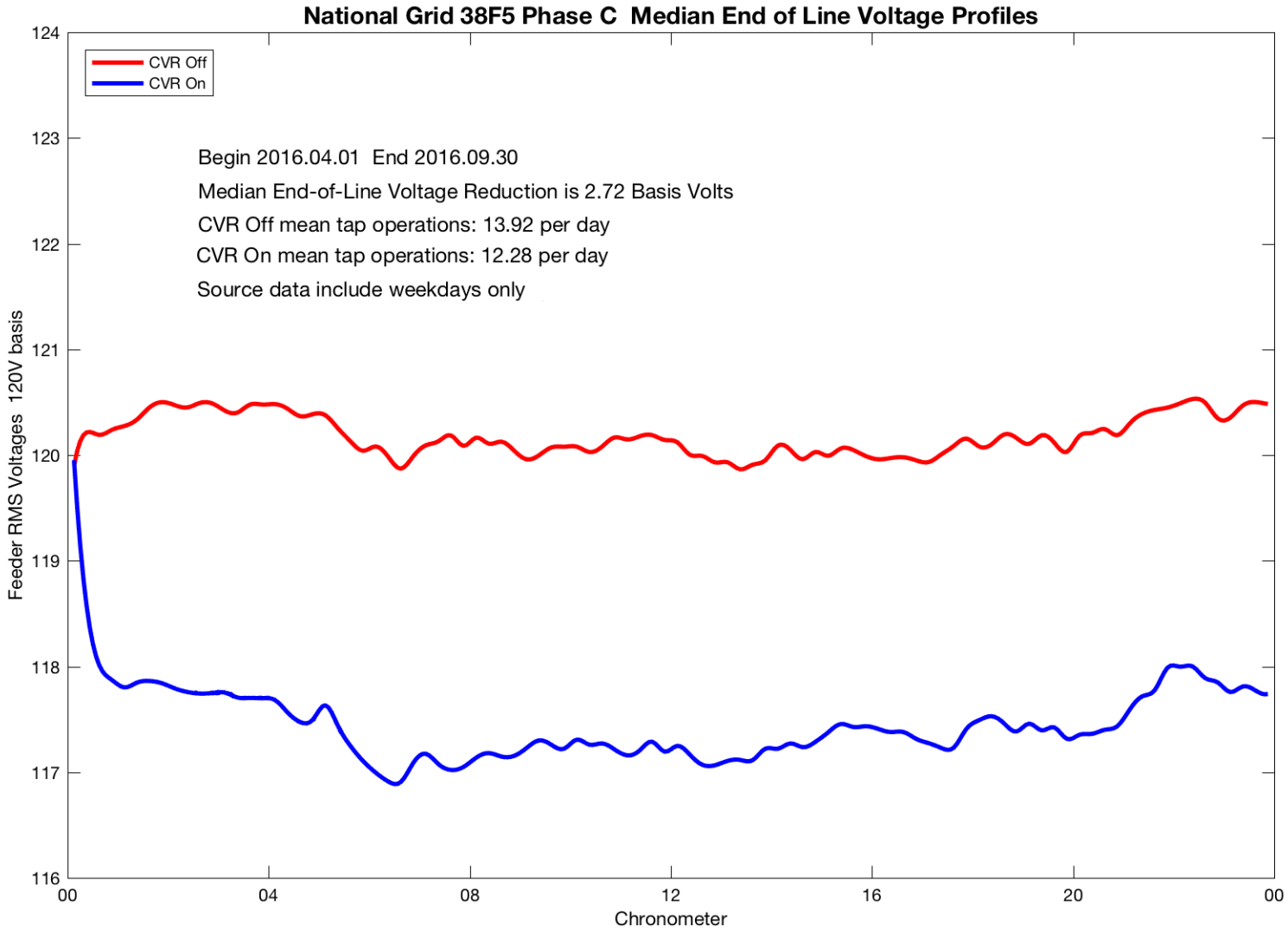
Feeder 38F5: Phase B – Median End of Line Voltage Profiles

Graph 23



Feeder 38F5: Phase C – Median End of Line Voltage Profiles

Graph 24



Division 5-13

Request:

Refer to Schedule PST-1, Chapter 3, page 4 regarding the power flow analysis to perform long-term system planning. Please provide the Company's most recent long-term system plan.

Response:

Schedule PST-1, Chapter 3, Page 4 refers to power flow analysis tools used for long-term system planning of specific individual studies. The Company does not create a single state wide long-term distribution system plan. The Company completes assessments at the distribution study area level and reviews the results of these studies with the Division of Public Utilities and Carriers during their annual discussions to reach mutually agreed upon Infrastructure, Safety, and Reliability Plans for the Company's upcoming fiscal year for the PUC's review and approval.

(This response is identical to the Company's response to Division 1-13 in Docket No. 4780.)

Prepared by or under the supervision of: Robert Sheridan

Division 5-14

Request:

Refer to Schedule PST-1, Chapter 3, page 7 regarding the system data portal.

a. Please describe the methodology for identifying the most advantageous locations for DERs, and whether this methodology will include an estimate of locational avoided costs.

b. Please provide a link to the similar system data portal deployed in New York and any documents that describe the additional functionality planned or under development.

Response:

a. Normal configuration equipment loading will initially be used to help identify the most advantageous locations for distributed energy resources (DERs). The initial version of the Company's system data portal will not include an estimate of locational avoided costs because there is no method to determine locational avoided costs in Rhode Island at this time. The specific methodology and metrics that will be used to identify advantageous locations for DERs and locational avoided costs will be developed based on consultation with interested stakeholders. The Company has committed to having locational avoided costs discussions with interested stakeholders to develop a methodology for the Company's 2018 System Reliability Procurement Report filing.

b. Please see below for the link to National Grid's New York System Data Portal. Attachment DIV 5-14 contains a summary of currently existing functionality. There are no formalized plans or activities to add functionality at this time.

New York System Data Portal:
http://ngrid.maps.arcgis.com/apps/MapSeries/index.html?appid=4c8cfd75800b469abb8febca4d5dab59&folderid=8ffa8a74bf834613a04c19a68eefb43b

(This response is identical to the Company's response to Division 1-14 in Docket No. 4780.)

Prepared by or under the supervision of: Robert Sheridan

Tabs Included in National Grid's System Data Portal for New York	Summary of Functionality/Information Provided
Introduction	Collection of maps to help customers, contractors and developers identify potential project sites. The maps provide the location and specific information for selected electric transmission lines, distribution lines and associated substations within the National Grid service NY electric service area. Note that National Grid's electric system is dynamic, so system configurations can change for a variety of planned and unplanned reasons. National Grid updates the map contents on a periodic basis, so the same location may show different information over time.
Company Reports	Links to the following reports: 5 YEAR T&D Capital Investment Plan (CIP), Asset Condition Report, Peak Load Forecast, Reliability Report, Summer Preparedness Report, and Power Quality Report.
Distribution Assets Overview	Interactive map that provides distribution asset information intended to help Distributed Energy Resource (DER) developers identify potential project sites on the National Grid electric distribution network, including location and characteristics for single, double, or three phase circuits; overhead and underground construction; and substations.
Capital Investment Plan	Interactive map that provides National Grid capital investment information intended to help DER developers identify potential project sites on the National Grid electric distribution network, including locations where there is planned or proposed capital investment on the distribution system. This information is intended to show an assessment of potential DER benefit may be associated with these projects.
DG Red Zone	Interactive map that indicates general areas/circuits where the cost to interconnect large (greater than 1 MW) Distributed Generation (DG) will be higher due to: low minimal daytime load, aggregated DG already interconnected, smaller conductor (wire size), operating voltage, and/or the number of DG applications in the queue on the circuit exceeding daytime load. This interim map is being made available prior to the development of hosting capacity methodology and resulting hosting capacity maps in an effort to assist the DG applicant. As hosting capacity maps become available, this map will be replaced.
Hosting Capacity	Feeder level hosting capacity for the distribution circuits evaluated. Hosting Capacity is an estimate of the amount of DER that may be accommodated without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades. Note that this analysis was conducted under current configurations, without installed DER, and prior to infrastructure upgrades such as: installing a recloser or remote terminal unit at the Point of Common Coupling, replacing a voltage regulating device or controller to allow for reverse flow, substation-related upgrades including 3V0 protection, or other protection-related upgrades.
DER Opportunity Documents	File that lists potential Non-Wires Alternative (NWA) project opportunities, including general information and project status. Note that this file will be updated periodically as information changes; and that Requests for Proposal (RFP) will contain additional details about project scope, area information, and timing.
LSRV/VDER	Interactive map that provides information intended to help DER developers identify potential project sites on the National Grid electric distribution network where there may be a Location System Relief Value(LSRV) benefit to the distribution system. Substations and all associated feeders are highlighted for a given LSRV area and details can be accessed for each substation. The MW Cap for each selected LSRV substation was determined to be the lesser of the load reduction necessary to reduce peak loading to 100 percent of the planning rating or DER penetration equal to substation minimum load levels. Note that the definition of a MW cap for LSRV does not imply that there is sufficient hosting capacity throughout the LSRV area to achieve that cap without distribution system enhancements associated with the interconnection. Hosting capacity may also vary by location on the circuit/feeder. LSRV MW caps may need to be subsequently adjusted if National Grid procures load relief in an LSRV area through a NWA solution, or due to changes in load forecasts or system capability. For that reason, actual qualification of a project for LSRV compensation will be determined on a project-by-project basis at the time an interconnection agreement for the project is executed with the Company.

Division 5-15

Request:

Refer to page 1 of Chapter 4 – AMF in Schedule PST-1, in which the customer service enhancements are described as "including notifications about changes to consumption patterns mid-month that give customers an opportunity to take action before the end of the billing cycle." Please provide the average load profile of a) Income Eligible customers and b) non-Income Eligible customers for the last five calendar years. Please provide the the profiles in machine-readable Excel documents.

Response:

Narragansett Electric does not separate income eligible and non-income eligible sample groups in its load research study, and, therefore, does not maintain separate load data and average load profiles for the residential class. Narragansett Electric's Load Research program's Residential Customer load profile is a single load profile that applies to both income eligible and non-income eligible customers. Please see Attachment DIV 5-15 for the Excel file containing the available Narragansett Electric load profiles.
(This response is identical to the Company's response to Division 1-15 in Docket No. 4780.)

Prepared by or under the supervision of: John Leana

Below are 5 years' interval data for the NECO Residential Class
Column B thru Z span the 24 hours of the day
Each heading in Row 7 is in "Hour Ending" format
For example, Cell B7 says "Hour Ending 1:00 AM"; this covers from Midnight to 1AM.
Likewise, Cell C7 says "Hour Ending 2:00 AM"; this covers from 1AM to 2AM

Date	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM
1/1/2012	0.71	0.65	0.59	0.55	0.59	0.60	0.62	0.71	0.84	0.87	0.93	0.93	0.95	0.88	0.79	0.85	0.92	1.02	1.06	1.06	0.99	0.92	0.78	0.70
1/2/2012	0.60	0.53	0.52	0.48	0.49	0.55	0.56	0.67	0.80	0.83	0.88	0.92	0.90	0.87	0.90	0.89	1.04	1.20	1.15	1.18	1.12	1.03	0.87	0.75
1/3/2012	0.67	0.63	0.60	0.60	0.62	0.69	0.88	0.95	0.86	0.80	0.77	0.76	0.85	0.83	0.81	0.80	1.12	1.27	1.26	1.26	1.23	1.12	1.05	0.91
1/4/2012	0.81	0.78	0.75	0.77	0.77	0.86	0.99	1.06	1.04	0.95	0.96	0.99	0.92	0.90	0.81	0.96	1.13	1.26	1.30	1.32	1.23	1.11	0.98	0.82
1/5/2012	0.76	0.75	0.69	0.70	0.72	0.80	0.92	0.98	0.93	0.87	0.93	0.82	0.83	0.79	0.82	0.87	1.06	1.22	1.25	1.29	1.19	1.09	0.94	0.79
1/6/2012	0.70	0.70	0.67	0.66	0.67	0.76	0.92	0.96	0.92	0.77	0.77	0.82	0.83	0.69	0.71	0.80	1.02	1.17	1.16	1.11	1.06	0.99	0.86	0.77
1/7/2012	0.66	0.64	0.59	0.54	0.58	0.64	0.65	0.76	0.85	0.88	0.95	0.79	0.76	0.86	0.75	0.79	0.88	1.01	0.99	0.94	0.89	0.90	0.82	0.71
1/8/2012	0.64	0.59	0.57	0.57	0.58	0.61	0.65	0.75	0.81	0.85	0.95	0.95	0.96	0.94	0.94	0.96	1.06	1.24	1.21	1.20	1.17	1.03	0.82	0.72
1/9/2012	0.66	0.65	0.62	0.62	0.63	0.75	0.88	0.91	0.89	0.88	0.84	0.87	0.89	0.83	0.75	0.78	1.03	1.23	1.35	1.23	1.15	1.09	0.95	0.78
1/10/2012	0.71	0.64	0.60	0.59	0.60	0.70	0.86	0.91	0.85	0.78	0.85	0.79	0.82	0.82	0.70	0.73	0.97	1.15	1.20	1.14	1.06	0.96	0.84	0.73
1/11/2012	0.60	0.59	0.54	0.57	0.61	0.67	0.84	0.94	0.88	0.84	0.81	0.73	0.76	0.78	0.72	0.76	0.94	1.18	1.20	1.10	1.06	0.96	0.85	0.69
1/12/2012	0.61	0.58	0.55	0.53	0.58	0.67	0.83	0.85	0.83	0.81	0.83	0.82	0.88	0.85	0.78	0.79	0.94	1.05	1.19	1.11	1.08	0.91	0.84	0.73
1/13/2012	0.66	0.58	0.56	0.57	0.55	0.67	0.79	0.87	0.77	0.81	0.78	0.77	0.75	0.76	0.75	0.84	1.00	1.17	1.16	1.12	1.07	1.02	0.89	0.76
1/14/2012	0.70	0.64	0.62	0.63	0.64	0.69	0.78	0.84	1.01	1.00	1.02	0.99	0.96	0.92	0.97	0.97	1.09	1.22	1.24	1.20	1.12	1.06	1.01	0.86
1/15/2012	0.81	0.73	0.75	0.73	0.73	0.78	0.81	0.92	1.09	1.16	1.26	1.20	1.19	1.11	1.07	1.14	1.21	1.31	1.33	1.33	1.22	1.19	1.09	0.96
1/16/2012	0.90	0.87	0.82	0.81	0.83	0.90	1.00	1.06	1.09	1.13	1.16	1.14	1.15	1.07	1.03	1.01	1.20	1.45	1.42	1.29	1.25	1.14	0.91	0.78
1/17/2012	0.69	0.65	0.64	0.59	0.63	0.71	0.87	0.95	0.85	0.80	0.80	0.83	0.83	0.74	0.73	0.81	0.94	1.11	1.18	1.07	0.98	0.90	0.79	0.65
1/18/2012	0.59	0.55	0.52	0.50	0.54	0.63	0.76	0.83	0.73	0.76	0.77	0.85	0.78	0.73	0.70	0.79	0.99	1.20	1.29	1.23	1.15	1.08	0.92	0.80
1/19/2012	0.75	0.70	0.69	0.68	0.72	0.81	0.97	1.06	0.94	0.89	0.94	0.89	0.92	0.81	0.80	0.84	0.99	1.24	1.33	1.32	1.23	1.19	1.01	0.78
1/20/2012	0.71	0.68	0.65	0.61	0.64	0.73	0.92	0.97	0.91	0.86	0.89	0.85	0.87	0.82	0.82	0.86	0.91	1.12	1.16	1.18	1.08	1.05	0.92	0.87
1/21/2012	0.77	0.76	0.73	0.70	0.69	0.74	0.75	0.90	1.01	1.11	1.16	1.15	1.20	1.18	1.21	1.15	1.29	1.39	1.36	1.31	1.17	1.16	0.99	0.90
1/22/2012	0.84	0.80	0.74	0.71	0.75	0.80	0.80	0.96	1.08	1.11	1.05	1.16	1.10	1.06	1.02	1.04	1.16	1.23	1.20	1.18	1.14	1.02	0.94	0.85
1/23/2012	0.74	0.66	0.66	0.65	0.69	0.78	0.88	1.01	0.86	0.86	0.92	0.83	0.81	0.80	0.81	0.88	1.02	1.17	1.31	1.24	1.13	0.94	0.83	0.71
1/24/2012	0.61	0.57	0.52	0.54	0.55	0.61	0.78	0.81	0.77	0.74	0.70	0.72	0.70	0.67	0.63	0.70	0.82	1.05	1.10	1.11	1.04	0.89	0.75	0.66
1/25/2012	0.58	0.56	0.50	0.53	0.56	0.63	0.82	0.91	0.82	0.73	0.76	0.77	0.70	0.75	0.68	0.77	0.81	1.04	1.16	1.09	1.02	0.99	0.84	0.80
1/26/2012	0.64	0.59	0.59	0.57	0.61	0.71	0.88	0.85	0.88	0.79	0.80	0.77	0.81	0.78	0.74	0.77	0.89	1.04	1.09	1.10	1.09	1.00	0.84	0.69
1/27/2012	0.59	0.56	0.55	0.53	0.56	0.63	0.78	0.86	0.81	0.83	0.83	0.79	0.83	0.83	0.78	0.85	0.96	1.08	1.07	0.99	0.93	0.88	0.81	0.73
1/28/2012	0.64	0.59	0.56	0.54	0.59	0.62	0.63	0.81	0.89	0.85	0.93	0.93	0.88	0.79	0.81	0.90	0.99	1.07	1.14	1.07	0.96	0.90	0.78	0.71
1/29/2012	0.63	0.55	0.54	0.55	0.57	0.61	0.67	0.76	0.90	0.96	0.99	1.00	0.94	0.90	0.89	0.86	1.08	1.20	1.17	1.14	1.07	0.98	0.85	0.70
1/30/2012	0.64	0.56	0.59	0.55	0.58	0.70	0.84	0.86	0.87	0.83	0.74	0.82	0.76	0.74	0.75	0.79	0.92	1.16	1.25	1.16	1.15	1.03	0.89	0.78
1/31/2012	0.68	0.65	0.62	0.63	0.64	0.71	0.91	1.02	0.87	0.73	0.71	0.73	0.70	0.67	0.67	0.68	0.81	1.05	1.08	1.08	1.00	0.94	0.81	0.72
2/1/2012	0.64	0.60	0.54	0.55	0.56	0.62	0.80	0.85	0.86	0.80	0.74	0.69	0.77	0.68	0.61	0.61	0.72	0.93	1.01	1.01	0.90	0.82	0.70	0.63
2/2/2012	0.55	0.51	0.50	0.51	0.53	0.62	0.77	0.85	0.80	0.74	0.76	0.77	0.69	0.70	0.71	0.78	0.91	1.06	1.08	1.06	1.01	1.03	0.81	0.70
2/3/2012	0.63	0.61	0.60	0.59	0.60	0.70	0.90	0.89	0.85	0.89	0.89	0.84	0.85	0.80	0.73	0.76	0.81	1.02	1.07	1.08	1.01	0.93	0.87	0.76
2/4/2012	0.68	0.62	0.60	0.59	0.58	0.65	0.69	0.75	0.84	0.90	0.86	0.85	0.93	0.81	0.83	0.92	0.89	1.01	1.12	1.06	1.00	0.94	0.86	0.76
2/5/2012	0.67	0.63	0.61	0.62	0.62	0.68	0.74	0.83	0.98	1.01	1.00	1.04	1.07	1.01	0.97	1.00	1.10	1.17	1.07	0.98	1.00	0.91	0.93	0.78
2/6/2012	0.69	0.65	0.63	0.64	0.64	0.72	0.87	0.92	0.89	0.78	0.79	0.80	0.79	0.75	0.74	0.75	0.79	1.00	1.10	1.13	1.05	0.91	0.79	0.65
2/7/2012	0.58	0.54	0.53	0.53	0.56	0.68	0.79	0.90	0.76	0.68	0.72	0.75	0.72	0.70	0.62	0.61	0.76	0.99	1.06	1.07	1.04	0.94	0.82	0.75
2/8/2012	0.64	0.58	0.57	0.58	0.63	0.71	0.88	0.94	0.89	0.86	0.80	0.77	0.81	0.77	0.72	0.79	0.89	1.18	1.21	1.17	1.06	0.98	0.83	0.67
2/9/2012	0.61	0.59	0.56	0.59	0.59	0.68	0.84	0.90	0.82	0.75	0.71	0.67	0.74	0.71	0.59	0.61	0.71	0.92	1.03	1.12	1.05	0.98	0.82	0.70
2/10/2012	0.66	0.62	0.59	0.61	0.64	0.67	0.87	0.89	0.80	0.81	0.76	0.73	0.75	0.66	0.64	0.63	0.75	0.93	1.07	0.98	0.92	0.87	0.77	0.68
2/11/2012	0.57	0.58	0.54	0.53	0.54	0.59	0.63	0.77	0.88	0.94	1.07	1.05	1.03	1.00	0.94	0.89	0.99	1.21	1.17	1.16	1.04	0.98	0.89	0.82
2/12/2012	0.73	0.68	0.66	0.69	0.70	0.75	0.77	0.94	1.02	1.08	1.10	1.02	1.07	1.06	1.02	1.14	1.18	1.32	1.31	1.31	1.24	1.03	1.03	0.86
2/13/2012	0.81	0.74	0.74	0.71	0.72	0.82	1.01	1.04	1.00	0.92	0.87	0.88	0.80	0.77	0.75	0.73	0.85	1.07	1.16	1.13	1.15	0.98	0.87	0.72
2/14/2012	0.67	0.60	0.61	0.59	0.63	0.71	0.83	0.93	0.86	0.83	0.80	0.80	0.79	0.77	0.79	0.70	0.77	0.97	1.06	1.04	1.00	0.87	0.77	0.71
2/15/2012	0.62	0.57	0.56	0.53	0.58	0.65	0.80	0.84	0.78	0.74	0.79	0.73	0.69	0.70	0.67	0.65	0.81	0.92	1.05	1.03	0.95	0.91	0.73	0.64
2/16/2012	0.58	0.54	0.55	0.55	0.58	0.69	0.81	0.82	0.79	0.78	0.77	0.72	0.70	0.75	0.69	0.73	0.88	1.03	1.09	1.05	1.00	0.90	0.82	0.67
2/17/2012	0.60	0.55	0.51	0.51	0.54	0.60	0.72	0.80	0.79	0.74	0.68	0.72	0.72	0.65	0.60	0.69	0.75	0.88	0.95	0.96	0.88	0.83	0.77	0.67
2/18/2012	0.63	0.59	0.55	0.56	0.59	0.62	0.70	0.77	0.90	0.89	0.92	0.88	0.90	0.89	0.82	0.81	0.85	0.98	0.98	0.89	0.84	0.77	0.78	0.69
2/19/2012	0.63	0.59	0.55	0.54	0.57	0.63	0.69	0.79	0.84	0.95	0.95	0.89	0.86	0.78	0.80	0.76	0.93	0.91	1.02	0.99	0.96	0.85	0.76	0.69
2/20/2012	0.64	0.62	0.58	0.57	0.61	0.67	0.76	0.84	0.92	0.90	0.93	0.91	1.02	0.92	0.77	0.82	0.93	1.09	1.15	1.12	1.08	0.96	0.88	0.78
2/21/2012	0.68	0.64	0.62	0.61	0.63	0.74	0.86	0.92	0.91	0.85	0.89	0.77	0.72	0.67	0.72	0.81	0.84	0.96	1.12	1.04	0.97	0.90	0.76	0.67
2/22/2012	0.61	0.59	0.55	0.53	0.59	0.64	0.74	0.80	0.76	0.73	0.75	0.70	0.69	0.66	0.57	0.62	0.68	0.84	0.97	0.93	0.90	0.89	0.75	0.64
2/23/2012	0.58	0.54	0.50	0.49	0.50	0.58	0.68	0.71	0.76	0.72	0.67	0.64	0.70	0.64	0.66	0.60	0.62	0.86	0.94	0.92	0.89	0.83	0.77	0.64
2/24/2012	0.59	0.54	0.52	0.51	0.53	0.60	0.68	0.82	0.84	0.89	0.93	0.90	0.89	0.83	0.84	0.81	0.93	1.00	1.16	1.09	1.01	0.93	0.80	0.71
2/25/2012	0.63	0.60	0.57	0.57	0.56	0.63	0.67	0.76	0.89	0.95	1.04	0.96	0.92	0.95	0.89	0.88	0.90	1.05	1.06	1.05	1.04	0.97	0.91	0.80
2/26/2012	0.70	0.69	0.62	0.62	0.64	0.71	0.75	0.84	0.95	1.04	1.03	0.97	0.96	0.96	0.88	0.88	0.91	1.08	1.18	1.18	1.06	0.91	0.85	0.69
2/27/2012	0.65	0.65	0.60	0.61	0.65	0.75	0.91	0.93	0.84	0.81	0.75	0.78	0.73	0.76	0.72	0.69	0.85	1.02	1.10	1.02	0.95	0.85	0.74	0.64
2/28/2012	0.59	0.55	0.53	0.54	0.59	0.67	0.76	0.83	0.76	0.72	0.70	0.65	0.64	0.71	0.63	0.65	0.72	0.95	1.07	1.08	1.01	0.91	0.80	0.64
2/29/2012	0.58	0.54	0.56	0.56	0.60	0.69	0.82	0.87	0.85	0.80	0.76	0.73	0.79	0.72	0.79	0.89	1.03	1.13	1.17	1.19	1.13	1.01	0.86	0.74
3/1/2012	0.66	0.61	0.59	0.57	0.59	0.70	0.78	0.91	0.83	0.82	0.83	0.82	0.84	0.79	0.77	0.79	0.93	1.00	1.12	1.24	1.18	1.10	0.92	0.74
3/2/2012	0.68	0.67	0.66	0.63	0.68	0.77	0.96	0.92	0.86	0.88	0.90	0.84	0.86	0.84	0.85	0.81	0.91	1.08	1.17	1.09	0.97	0.93	0.85	0.77
3/3/2012	0.69	0.64	0.61	0.61	0.60	0.62	0.68	0.76	0.93	0.94	1.03	0.97	0.98	0.93	0.87	0.82	0.86	0.99	1.04	0.98	0.92	0.87	0.77	0.67
3/4/2012	0.62	0.62	0.55	0.58	0.58	0.59	0.63	0.79	0.89	0.97	0.95	0.95	0.97	0.96	0.90	0.93	0.95	1.08	1.15	1.09	1.04	0.99	0.86	0.72
3/5/2012	0.66	0.62	0.59	0.60	0.64	0.75	0.90	0.86	0.91	0.88	0.86	0.80	0.82	0.77	0.72	0.77	0.86	1.00	1.12	1.07	1.03	0.98	0.87	0.75
3/6/2012	0.70	0.66	0.65	0.67	0.71	0.78	0.89	0.97	0.83	0.82	0.80	0.75	0.78	0.72	0.70	0.74	0.78	0.98	1.13	1.10	1.01	0.96	0.84	0.73
3/7/2012	0.66	0.61	0.59	0.58	0.64	0.71	0.87	0.83	0.79	0.75	0.67	0.72	0.66	0.65	0.56	0.68	0.79	0.92	0.97	0.99	1.01	0.90	0.74	0.65

3/8/2012	0.54	0.53	0.50	0.49	0.51	0.63	0.79	0.78	0.73	0.64	0.58	0.56	0.59	0.56	0.58	0.57	0.68	0.83	0.94	0.96	0.85	0.80	0.63	0.55
3/9/2012	0.47	0.46	0.46	0.44	0.50	0.55	0.72	0.78	0.75	0.69	0.70	0.67	0.69	0.69	0.64	0.67	0.74	0.93	1.07	0.99	0.95	0.86	0.77	0.69
3/10/2012	0.61	0.59	0.60	0.60	0.61	0.66	0.78	0.88	0.97	1.00	1.01	1.01	0.96	0.92	0.89	0.85	0.93	0.94	1.02	1.07	0.97	0.89	0.84	0.74
3/11/2012	0.63	0.62	0.00	0.60	0.60	0.64	0.67	0.78	0.84	0.89	0.87	0.87	0.83	0.84	0.74	0.76	0.82	0.87	0.93	1.05	0.98	0.94	0.80	0.68
3/12/2012	0.56	0.51	0.52	0.50	0.53	0.61	0.76	0.76	0.72	0.69	0.69	0.64	0.58	0.56	0.56	0.53	0.66	0.75	0.84	0.97	0.92	0.81	0.73	0.60
3/13/2012	0.47	0.43	0.41	0.40	0.44	0.50	0.62	0.71	0.68	0.63	0.70	0.61	0.63	0.57	0.54	0.53	0.61	0.79	0.88	0.95	0.80	0.73	0.65	0.55
3/14/2012	0.44	0.44	0.40	0.39	0.42	0.49	0.64	0.72	0.69	0.65	0.64	0.60	0.62	0.53	0.52	0.53	0.61	0.66	0.79	0.94	0.85	0.81	0.69	0.58
3/15/2012	0.50	0.44	0.44	0.44	0.46	0.56	0.68	0.75	0.67	0.65	0.67	0.68	0.64	0.63	0.62	0.55	0.62	0.71	0.85	1.00	0.89	0.85	0.72	0.62
3/16/2012	0.54	0.53	0.50	0.47	0.49	0.59	0.70	0.77	0.71	0.72	0.71	0.68	0.72	0.71	0.63	0.66	0.72	0.82	0.86	0.93	0.90	0.85	0.75	0.71
3/17/2012	0.58	0.52	0.52	0.51	0.48	0.52	0.56	0.69	0.78	0.85	0.87	0.84	0.85	0.87	0.83	0.77	0.78	0.73	0.87	0.90	0.84	0.77	0.75	0.65
3/18/2012	0.58	0.52	0.51	0.50	0.50	0.53	0.59	0.69	0.80	0.88	0.93	0.81	0.81	0.80	0.75	0.80	0.72	0.78	0.89	0.95	0.94	0.80	0.67	0.57
3/19/2012	0.55	0.44	0.43	0.43	0.44	0.53	0.72	0.73	0.67	0.60	0.55	0.58	0.55	0.58	0.54	0.54	0.61	0.67	0.78	0.90	0.92	0.72	0.63	0.53
3/20/2012	0.49	0.42	0.41	0.42	0.40	0.49	0.67	0.75	0.66	0.62	0.59	0.52	0.56	0.55	0.48	0.50	0.54	0.65	0.75	0.93	0.88	0.77	0.63	0.52
3/21/2012	0.44	0.38	0.38	0.37	0.38	0.46	0.62	0.64	0.61	0.54	0.56	0.57	0.55	0.53	0.51	0.47	0.55	0.59	0.73	0.83	0.83	0.75	0.66	0.54
3/22/2012	0.42	0.39	0.38	0.37	0.38	0.43	0.59	0.66	0.63	0.53	0.50	0.55	0.55	0.50	0.50	0.50	0.59	0.72	0.77	0.87	0.88	0.73	0.59	0.48
3/23/2012	0.41	0.39	0.37	0.36	0.37	0.45	0.56	0.65	0.61	0.59	0.59	0.59	0.57	0.53	0.53	0.58	0.61	0.74	0.72	0.81	0.78	0.72	0.62	0.51
3/24/2012	0.42	0.40	0.37	0.38	0.38	0.41	0.46	0.57	0.67	0.71	0.77	0.81	0.69	0.65	0.64	0.65	0.64	0.78	0.81	0.79	0.80	0.74	0.63	0.55
3/25/2012	0.46	0.44	0.41	0.40	0.40	0.44	0.49	0.62	0.78	0.78	0.85	0.85	0.89	0.86	0.86	0.85	0.92	0.90	1.04	1.04	0.92	0.84	0.69	0.58
3/26/2012	0.49	0.48	0.46	0.45	0.48	0.56	0.75	0.72	0.65	0.66	0.64	0.61	0.61	0.62	0.54	0.59	0.64	0.76	0.87	1.03	0.97	0.89	0.78	0.64
3/27/2012	0.61	0.57	0.56	0.57	0.64	0.71	0.82	0.91	0.79	0.73	0.68	0.68	0.70	0.66	0.63	0.62	0.66	0.80	0.84	1.00	1.02	0.92	0.74	0.64
3/28/2012	0.55	0.53	0.51	0.53	0.52	0.60	0.74	0.74	0.71	0.64	0.62	0.62	0.66	0.69	0.61	0.65	0.72	0.81	0.86	0.89	0.85	0.78	0.68	0.58
3/29/2012	0.50	0.46	0.44	0.46	0.46	0.55	0.70	0.70	0.66	0.61	0.65	0.64	0.65	0.62	0.60	0.67	0.74	0.87	0.91	0.97	1.03	0.88	0.75	0.63
3/30/2012	0.58	0.56	0.54	0.53	0.55	0.65	0.75	0.79	0.75	0.67	0.63	0.70	0.64	0.59	0.57	0.60	0.61	0.67	0.70	0.89	0.90	0.77	0.73	0.63
3/31/2012	0.55	0.50	0.51	0.48	0.49	0.51	0.61	0.70	0.80	0.88	0.96	0.92	0.94	1.03	0.95	0.94	1.02	1.05	0.97	0.99	0.89	0.80	0.77	0.69
4/1/2012	0.67	0.61	0.58	0.61	0.61	0.65	0.68	0.79	0.91	1.04	0.93	0.88	0.89	0.92	0.88	0.93	0.92	1.03	1.04	1.12	0.96	0.88	0.79	0.65
4/2/2012	0.55	0.54	0.49	0.50	0.54	0.63	0.83	0.84	0.81	0.82	0.77	0.77	0.74	0.68	0.63	0.67	0.67	0.81	1.01	1.00	0.98	0.90	0.82	0.69
4/3/2012	0.57	0.53	0.56	0.55	0.58	0.72	0.80	0.86	0.82	0.74	0.68	0.74	0.74	0.61	0.57	0.55	0.62	0.71	0.80	0.94	0.87	0.81	0.76	0.63
4/4/2012	0.52	0.49	0.48	0.48	0.52	0.62	0.74	0.75	0.72	0.67	0.62	0.61	0.64	0.59	0.54	0.60	0.61	0.80	0.83	0.94	0.92	0.87	0.70	0.59
4/5/2012	0.49	0.45	0.46	0.46	0.50	0.61	0.77	0.80	0.74	0.69	0.60	0.67	0.62	0.67	0.63	0.63	0.70	0.77	0.77	0.86	0.91	0.86	0.77	0.63
4/6/2012	0.56	0.52	0.53	0.53	0.57	0.64	0.74	0.82	0.81	0.87	0.83	0.83	0.76	0.71	0.69	0.64	0.74	0.74	0.76	0.85	0.85	0.83	0.76	0.64
4/7/2012	0.56	0.54	0.53	0.55	0.57	0.59	0.67	0.81	0.94	0.95	0.90	0.88	0.83	0.81	0.79	0.75	0.80	0.91	0.98	0.96	0.98	0.89	0.72	0.67
4/8/2012	0.58	0.51	0.48	0.48	0.51	0.57	0.61	0.76	0.87	1.02	1.03	0.96	0.93	0.82	0.71	0.75	0.67	0.74	0.82	0.89	0.95	0.85	0.71	0.55
4/9/2012	0.53	0.48	0.50	0.48	0.53	0.61	0.79	0.76	0.69	0.65	0.66	0.62	0.64	0.63	0.54	0.55	0.61	0.79	0.88	0.90	0.95	0.78	0.71	0.55
4/10/2012	0.50	0.49	0.46	0.48	0.48	0.59	0.80	0.76	0.71	0.62	0.64	0.58	0.57	0.54	0.53	0.57	0.63	0.83	0.87	0.96	0.98	0.83	0.70	0.55
4/11/2012	0.48	0.47	0.45	0.45	0.48	0.53	0.79	0.77	0.66	0.62	0.57	0.60	0.63	0.57	0.58	0.63	0.80	0.85	0.88	0.84	0.87	0.90	0.68	0.54
4/12/2012	0.50	0.43	0.46	0.46	0.50	0.57	0.74	0.78	0.73	0.71	0.72	0.68	0.69	0.69	0.70	0.69	0.74	0.82	0.96	1.03	1.07	0.91	0.76	0.59
4/13/2012	0.54	0.52	0.51	0.51	0.54	0.62	0.78	0.80	0.70	0.70	0.61	0.61	0.58	0.58	0.54	0.59	0.63	0.65	0.71	0.84	0.93	0.91	0.76	0.62
4/14/2012	0.56	0.50	0.46	0.47	0.50	0.53	0.58	0.70	0.79	0.83	0.77	0.78	0.71	0.72	0.68	0.68	0.70	0.77	0.72	0.72	0.77	0.71	0.60	0.50
4/15/2012	0.47	0.41	0.40	0.39	0.41	0.43	0.50	0.59	0.71	0.79	0.69	0.67	0.70	0.65	0.72	0.75	0.77	0.80	0.83	0.82	0.82	0.73	0.61	0.51
4/16/2012	0.43	0.44	0.41	0.41	0.42	0.49	0.60	0.60	0.66	0.67	0.64	0.65	0.63	0.58	0.64	0.61	0.69	0.76	0.76	0.83	0.90	0.85	0.69	0.54
4/17/2012	0.49	0.42	0.41	0.40	0.43	0.49	0.56	0.59	0.62	0.63	0.61	0.60	0.62	0.62	0.59	0.59	0.64	0.73	0.76	0.77	0.86	0.80	0.70	0.54
4/18/2012	0.44	0.40	0.38	0.38	0.39	0.46	0.53	0.58	0.63	0.60	0.62	0.62	0.54	0.54	0.55	0.56	0.68	0.75	0.84	0.83	0.87	0.82	0.65	0.52
4/19/2012	0.46	0.40	0.39	0.39	0.39	0.47	0.55	0.59	0.60	0.61	0.61	0.62	0.60	0.57	0.54	0.55	0.66	0.71	0.77	0.79	0.85	0.76	0.61	0.55
4/20/2012	0.46	0.44	0.40	0.42	0.41	0.49	0.61	0.67	0.61	0.59	0.59	0.61	0.60	0.54	0.56	0.59	0.62	0.65	0.68	0.76	0.73	0.71	0.67	0.56
4/21/2012	0.44	0.43	0.39	0.38	0.38	0.42	0.52	0.60	0.71	0.76	0.75	0.75	0.70	0.71	0.66	0.70	0.76	0.72	0.78	0.84	0.80	0.82	0.74	0.60
4/22/2012	0.50	0.42	0.43	0.40	0.38	0.44	0.47	0.55	0.68	0.77	0.81	0.78	0.82	0.82	0.83	0.91	0.93	0.92	0.94	1.02	1.00	0.89	0.73	0.62
4/23/2012	0.51	0.44	0.46	0.44	0.47	0.57	0.71	0.70	0.73	0.71	0.68	0.68	0.71	0.63	0.60	0.61	0.73	0.91	0.92	0.93	0.98	0.86	0.69	0.57
4/24/2012	0.50	0.51	0.45	0.46	0.49	0.56	0.72	0.79	0.64	0.67	0.63	0.61	0.60	0.58	0.56	0.57	0.61	0.73	0.80	0.85	0.94	0.82	0.73	0.60
4/25/2012	0.46	0.43	0.46	0.44	0.48	0.58	0.68	0.72	0.65	0.63	0.64	0.62	0.60	0.57	0.60	0.63	0.71	0.82	0.86	0.85	0.90	0.84	0.70	0.57
4/26/2012	0.49	0.47	0.46	0.48	0.50	0.63	0.76	0.77	0.74	0.68	0.58	0.63	0.64	0.60	0.61	0.66	0.72	0.81	0.86	0.90	0.93	0.85	0.68	0.57
4/27/2012	0.48	0.45	0.44	0.42	0.46	0.53	0.68	0.74	0.72	0.69	0.67	0.64	0.60	0.62	0.59	0.60	0.71	0.76	0.80	0.88	0.91	0.80	0.75	0.65
4/28/2012	0.55	0.52	0.51	0.53	0.51	0.55	0.65	0.74	0.85	0.87	0.79	0.85	0.80	0.71	0.70	0.74	0.72	0.74	0.82	0.87	0.86	0.78	0.73	0.60
4/29/2012	0.52	0.49	0.46	0.45	0.48	0.52	0.59	0.73	0.78	0.82	0.74	0.73	0.77	0.79	0.73	0.69	0.75	0.81	0.81	0.93	0.93	0.85	0.72	0.63
4/30/2012	0.54	0.47	0.46	0.47	0.52	0.62	0.82	0.83	0.77	0.73	0.67	0.71	0.64	0.59	0.58	0.61	0.67	0.76	0.84	0.87	1.00	0.87	0.77	0.59
5/1/2012	0.49	0.43	0.42	0.41	0.43	0.53	0.69	0.73	0.65	0.68	0.67	0.71	0.70	0.64	0.65	0.71	0.82	0.92	0.95	0.98	1.01	0.81	0.69	0.53
5/2/2012	0.49	0.45	0.42	0.42	0.43	0.55	0.68	0.75	0.65	0.66	0.66	0.64	0.66	0.64	0.57	0.62	0.67	0.78	0.87	0.91	0.91	0.82	0.67	0.57
5/3/2012	0.45	0.42	0.41	0.40	0.41	0.52	0.69	0.73	0.64	0.61	0.60	0.64	0.63	0.60	0.54	0.62	0.68	0.79	0.79	0.91	0.85	0.78	0.65	0.53
5/4/2012	0.48	0.44	0.43	0.41	0.46	0.51	0.66	0.75	0.61	0.66	0.65	0.63	0.65	0.60	0.57	0.60	0.71	0.77	0.88	0.87	0.86	0.82	0.75	0.61
5/5/2012	0.51	0.45	0.46	0.42	0.42	0.46	0.52	0.58	0.75	0.85	0.90	0.87	0.85	0.82	0.78	0.84	0.77	0.83	0.85	0.82	0.83	0.70	0.65	0.58
5/6/2012	0.50	0.47	0.43	0.42	0.43	0.48	0.51	0.61	0.70	0.83	0.81	0.73	0.76	0.77	0.75	0.70	0.70	0.76	0.87	0.88	0.92	0.84	0.68	0.50
5/7/2012	0.43	0.40	0.41	0.40	0.42	0.51	0.65	0.63	0.59	0.56	0.59	0.60	0.55	0.55	0.49	0.53	0.60	0.70	0.75	0.83	0.90	0.80	0.71	0.56
5/8/2012	0.48	0.43	0.42	0.40	0.41	0.52	0.65	0.74	0.66	0.62	0.67	0.65	0.64	0.61	0.63	0.69	0.74	0.85	0.91	1.03	0.90	0.81	0.65	0.54
5/9/2012	0.47	0.44	0.39	0.40	0.43	0.49	0.62	0.68	0.67	0.66	0.61	0.63	0.64	0.60	0.62	0.64	0.72	0.83	0.79	0.84	0.84	0.79	0.66	0.53
5/10/2012	0.46	0.45	0.40	0.40	0.42	0.52	0.61	0.65	0.67	0.63	0.62	0.61	0.68	0.57	0.54	0.56	0.61	0.73	0.85	0.88	0.87	0.87	0.69	0.60
5/11/2012	0.46	0.42	0.40	0.40	0.42	0.51	0.65	0.62	0.65	0.64	0.62	0.65	0.64	0.65	0.59	0.61	0.64	0.67	0.69	0.75	0.77	0.77	0.70	0.55
5/12/2012	0.48	0.43	0.40	0.44	0.43	0.48	0.52	0.63	0.74	0.81	0.73	0.73	0.68	0.66	0.68	0.70	0.68	0.70	0.78	0.76	0.85	0.80	0.68	0.60
5/13/2012	0.51	0.47	0.42	0.42	0.39	0.44	0.48	0.58	0.70	0.76	0.76	0.74	0.69	0.69	0.64	0.69	0.67	0.78	0.76	0.87	0.91	0.79	0.70	0.56
5/14/2012	0.46	0.43	0.42	0.41	0.40	0.48	0.60	0.62	0.65	0.58	0.61	0.60	0.64	0.58	0.58	0.69	0.70	0.79	0.81	0.85	0.83	0.75	0.63	0.54
5/15/2012	0.44	0.42	0.40	0.40	0.41	0.46	0.62	0.64	0.60	0.59	0.62	0.59	0.64	0.64	0.62	0.68	0.69	0.81	0.88	0.88	0.86	0.77	0.66	0.52
5/16/2012	0.44	0.42	0.40	0.41	0.40	0.47	0.57	0.66	0.61	0.65	0.63	0.63	0.59	0.63	0.57	0.61	0.67	0.80	0.86	0.82	0.78	0.79	0.70	0.57
5/17/2012	0.44	0.44	0.43	0.39	0.44	0.50	0.64	0.66	0.64	0.61	0.59	0.63	0.56	0.58	0.56	0.63	0.68	0.69	0.73	0.79	0.83	0.82	0.66	0.53
5/18/2012	0.47	0.40	0.41	0.43	0.41	0.50	0.58	0.66	0.62	0.61	0.59	0.57	0.57	0.54	0.55	0.60	0.57	0.67	0.70	0.73	0.79	0.82	0.72	0.62
5/19/2012	0.53	0.46	0.39	0.44	0.42	0.43	0.50	0.61	0.67	0.83	0.79	0.72	0.71	0.75	0.80	0.73	0.80	0.76	0.76	0.74	0.79	0.74	0.65	0.60
5/20/2012	0.50	0.43	0.43	0.43	0.40	0.44	0.47	0.58	0.70	0.76	0.74	0.76	0.75	0.79	0.77	0.74	0.79	0.82	0.84	0.85	0.95	0.90	0.68	0.58

5/21/2012	0.45	0.45	0.41	0.39	0.40	0.49	0.61	0.64	0.61	0.54	0.59	0.59	0.64	0.59	0.55	0.63	0.75	0.79	0.97	0.90	0.90	0.77	0.65	0.57
5/22/2012	0.47	0.42	0.41	0.42	0.41	0.51	0.64	0.70	0.62	0.61	0.64	0.67	0.59	0.57	0.60	0.59	0.74	0.84	0.87	0.85	0.91	0.82	0.67	0.57
5/23/2012	0.47	0.43	0.42	0.40	0.44	0.50	0.64	0.67	0.69	0.63	0.57	0.64	0.59	0.58	0.65	0.68	0.73	0.74	0.83	0.84	0.85	0.85	0.72	0.55
5/24/2012	0.47	0.43	0.41	0.41	0.41	0.50	0.62	0.64	0.59	0.64	0.60	0.59	0.63	0.64	0.62	0.65	0.72	0.87	0.83	0.83	0.96	0.80	0.75	0.58
5/25/2012	0.48	0.42	0.44	0.42	0.41	0.49	0.63	0.67	0.66	0.63	0.59	0.62	0.60	0.63	0.58	0.59	0.67	0.70	0.80	0.82	0.89	0.80	0.71	0.61
5/26/2012	0.51	0.47	0.43	0.46	0.43	0.49	0.53	0.59	0.74	0.77	0.84	0.84	0.88	0.87	0.89	0.91	0.99	0.93	0.95	0.91	0.95	0.98	0.85	0.71
5/27/2012	0.60	0.53	0.49	0.48	0.45	0.47	0.53	0.62	0.72	0.84	0.82	0.83	0.84	0.91	0.88	0.90	0.99	1.03	0.97	0.87	0.88	0.88	0.80	0.71
5/28/2012	0.61	0.53	0.48	0.46	0.46	0.51	0.51	0.58	0.71	0.89	0.87	0.95	0.97	0.94	0.96	1.01	1.06	1.11	1.13	1.09	1.06	0.95	0.82	0.74
5/29/2012	0.57	0.53	0.50	0.49	0.47	0.54	0.69	0.70	0.67	0.73	0.74	0.82	0.87	0.87	0.89	0.97	1.09	1.13	1.17	1.19	1.27	1.20	1.05	0.88
5/30/2012	0.70	0.62	0.56	0.56	0.57	0.61	0.72	0.82	0.79	0.73	0.80	0.75	0.80	0.77	0.81	0.86	0.94	1.04	1.06	1.05	1.14	1.10	0.93	0.76
5/31/2012	0.61	0.57	0.52	0.50	0.48	0.54	0.68	0.74	0.74	0.74	0.74	0.77	0.81	0.82	0.83	0.89	0.93	0.98	1.06	1.03	1.04	1.00	0.93	0.74
6/1/2012	0.61	0.54	0.54	0.50	0.49	0.58	0.65	0.69	0.67	0.65	0.68	0.62	0.66	0.67	0.73	0.80	0.78	0.86	0.81	0.85	0.88	0.87	0.75	0.62
6/2/2012	0.55	0.50	0.46	0.47	0.48	0.46	0.52	0.59	0.73	0.85	0.86	0.82	0.87	0.89	0.87	0.83	0.86	0.90	0.98	0.87	0.87	0.79	0.73	0.65
6/3/2012	0.52	0.50	0.46	0.45	0.46	0.49	0.52	0.62	0.75	0.78	0.75	0.79	0.87	0.82	0.82	0.82	0.86	0.93	0.94	1.02	0.94	0.94	0.77	0.57
6/4/2012	0.50	0.47	0.44	0.43	0.46	0.52	0.65	0.66	0.65	0.65	0.65	0.67	0.68	0.65	0.67	0.70	0.79	0.96	0.99	0.99	0.97	0.88	0.71	0.57
6/5/2012	0.48	0.47	0.46	0.44	0.49	0.53	0.66	0.72	0.66	0.60	0.66	0.65	0.63	0.66	0.63	0.66	0.76	0.85	0.89	0.90	0.91	0.83	0.71	0.55
6/6/2012	0.51	0.45	0.43	0.43	0.47	0.54	0.71	0.75	0.76	0.68	0.70	0.62	0.71	0.68	0.66	0.64	0.77	0.89	0.88	0.90	0.92	0.88	0.77	0.56
6/7/2012	0.49	0.44	0.42	0.41	0.46	0.53	0.67	0.67	0.65	0.64	0.62	0.65	0.64	0.69	0.69	0.70	0.77	0.90	0.84	0.86	0.91	0.84	0.72	0.57
6/8/2012	0.50	0.45	0.43	0.41	0.45	0.52	0.63	0.66	0.67	0.66	0.69	0.68	0.71	0.75	0.73	0.73	0.78	0.84	0.92	0.91	0.94	0.92	0.77	0.66
6/9/2012	0.58	0.52	0.48	0.48	0.48	0.50	0.55	0.70	0.82	0.83	0.82	0.81	0.89	0.95	0.85	0.91	0.87	0.88	0.92	0.92	0.96	0.89	0.76	0.72
6/10/2012	0.58	0.52	0.48	0.48	0.48	0.49	0.54	0.66	0.80	0.82	0.85	0.93	0.89	1.03	1.04	1.03	1.00	1.02	0.99	1.04	0.99	0.95	0.79	0.62
6/11/2012	0.53	0.50	0.49	0.49	0.50	0.55	0.63	0.68	0.65	0.67	0.72	0.72	0.70	0.69	0.70	0.76	0.79	0.99	0.96	0.98	0.98	0.97	0.75	0.63
6/12/2012	0.53	0.49	0.45	0.46	0.47	0.55	0.66	0.66	0.67	0.63	0.65	0.62	0.73	0.65	0.64	0.78	0.82	0.93	0.95	0.90	1.00	0.83	0.74	0.62
6/13/2012	0.56	0.53	0.49	0.47	0.45	0.55	0.69	0.71	0.74	0.71	0.73	0.72	0.72	0.67	0.64	0.70	0.81	0.87	0.90	0.86	0.92	0.88	0.71	0.60
6/14/2012	0.52	0.48	0.47	0.48	0.47	0.52	0.68	0.70	0.70	0.72	0.65	0.66	0.66	0.65	0.63	0.69	0.74	0.83	0.86	0.88	0.88	0.91	0.76	0.65
6/15/2012	0.55	0.48	0.47	0.49	0.46	0.54	0.63	0.70	0.73	0.64	0.65	0.69	0.70	0.63	0.65	0.67	0.79	0.82	0.85	0.82	0.86	0.87	0.79	0.66
6/16/2012	0.56	0.52	0.47	0.46	0.47	0.46	0.53	0.65	0.76	0.89	0.83	0.79	0.86	0.86	0.82	0.91	0.92	0.84	0.87	0.92	0.88	0.89	0.74	0.62
6/17/2012	0.52	0.49	0.47	0.45	0.43	0.46	0.51	0.58	0.70	0.77	0.79	0.77	0.79	0.75	0.77	0.83	0.88	0.89	0.80	0.89	0.92	0.89	0.71	0.58
6/18/2012	0.50	0.48	0.46	0.46	0.47	0.53	0.70	0.72	0.67	0.66	0.65	0.67	0.68	0.72	0.68	0.75	0.81	0.97	0.94	0.90	1.01	0.96	0.77	0.61
6/19/2012	0.57	0.47	0.45	0.44	0.46	0.53	0.64	0.69	0.71	0.71	0.70	0.71	0.68	0.69	0.73	0.80	0.80	0.91	0.88	0.90	0.93	0.99	0.81	0.66
6/20/2012	0.55	0.52	0.48	0.49	0.49	0.57	0.72	0.79	0.88	0.90	0.91	1.02	1.15	1.19	1.21	1.35	1.53	1.76	1.72	1.73	1.81	1.70	1.51	1.28
6/21/2012	1.08	0.99	0.96	0.90	0.86	0.91	1.06	1.16	1.20	1.34	1.44	1.47	1.57	1.63	1.71	1.74	1.79	1.89	1.94	1.92	1.88	1.75	1.54	1.34
6/22/2012	1.11	1.02	0.95	0.94	0.90	0.89	1.10	1.19	1.22	1.27	1.40	1.49	1.59	1.72	1.80	1.77	1.74	1.72	1.49	1.38	1.37	1.30	1.18	1.07
6/23/2012	0.92	0.83	0.78	0.77	0.73	0.74	0.77	0.87	1.01	1.05	1.13	1.18	1.27	1.25	1.44	1.48	1.55	1.46	1.40	1.35	1.27	1.20	1.07	0.94
6/24/2012	0.77	0.65	0.59	0.61	0.58	0.58	0.67	0.76	0.92	0.98	0.98	1.02	1.09	1.19	1.20	1.16	1.26	1.29	1.29	1.26	1.35	1.22	1.11	0.92
6/25/2012	0.78	0.70	0.65	0.65	0.63	0.69	0.78	0.83	0.79	0.83	0.86	0.84	0.81	0.79	0.74	0.76	0.89	1.00	1.12	1.08	1.10	1.05	0.92	0.73
6/26/2012	0.59	0.54	0.52	0.50	0.51	0.56	0.70	0.75	0.78	0.75	0.74	0.84	0.77	0.75	0.81	0.80	0.82	0.96	0.97	0.95	0.96	0.95	0.81	0.64
6/27/2012	0.53	0.51	0.46	0.45	0.45	0.55	0.64	0.67	0.70	0.74	0.75	0.74	0.77	0.77	0.79	0.88	0.96	0.97	0.97	0.99	1.05	0.97	0.85	0.75
6/28/2012	0.62	0.57	0.53	0.52	0.50	0.56	0.67	0.80	0.82	0.86	0.90	0.91	0.94	0.96	0.98	1.06	1.19	1.33	1.34	1.23	1.25	1.33	1.18	0.97
6/29/2012	0.76	0.67	0.64	0.60	0.60	0.64	0.77	0.89	0.98	1.01	1.01	0.99	1.06	1.12	1.29	1.39	1.49	1.53	1.53	1.52	1.50	1.55	1.29	1.08
6/30/2012	0.93	0.82	0.76	0.72	0.71	0.70	0.78	0.90	1.06	1.16	1.30	1.37	1.46	1.55	1.66	1.72	1.67	1.70	1.74	1.55	1.49	1.41	1.32	1.12
7/1/2012	0.96	0.87	0.82	0.76	0.71	0.76	0.80	0.93	1.13	1.32	1.46	1.55	1.61	1.65	1.70	1.66	1.50	1.45	1.42	1.42	1.39	1.34	1.17	0.99
7/2/2012	0.85	0.75	0.69	0.68	0.68	0.70	0.86	0.93	0.94	1.06	1.12	1.17	1.24	1.24	1.22	1.22	1.30	1.33	1.33	1.30	1.27	1.24	1.11	0.95
7/3/2012	0.78	0.74	0.67	0.65	0.62	0.66	0.76	0.87	0.92	0.95	1.01	1.08	1.18	1.20	1.26	1.29	1.46	1.45	1.39	1.35	1.30	1.27	1.22	1.03
7/4/2012	0.90	0.81	0.76	0.73	0.72	0.72	0.75	0.82	0.95	1.05	1.23	1.38	1.37	1.46	1.51	1.51	1.54	1.58	1.57	1.49	1.44	1.40	1.30	1.17
7/5/2012	0.96	0.88	0.83	0.81	0.78	0.80	0.89	1.07	1.07	1.17	1.24	1.31	1.33	1.36	1.46	1.47	1.53	1.55	1.52	1.47	1.47	1.44	1.29	1.04
7/6/2012	0.87	0.81	0.73	0.72	0.69	0.67	0.80	0.90	1.00	1.10	1.12	1.29	1.33	1.34	1.36	1.52	1.50	1.59	1.60	1.55	1.47	1.44	1.36	1.11
7/7/2012	0.99	0.91	0.86	0.83	0.77	0.76	0.85	0.98	1.19	1.40	1.57	1.67	1.64	1.71	1.75	1.63	1.56	1.53	1.61	1.56	1.54	1.36	1.31	1.12
7/8/2012	0.97	0.86	0.80	0.77	0.74	0.71	0.78	0.86	1.07	1.29	1.50	1.50	1.55	1.64	1.71	1.72	1.76	1.73	1.68	1.62	1.64	1.56	1.42	1.15
7/9/2012	1.02	0.91	0.82	0.79	0.73	0.76	0.88	0.89	0.88	0.94	0.98	1.07	1.17	1.18	1.22	1.26	1.37	1.49	1.47	1.35	1.30	1.25	1.09	0.91
7/10/2012	0.78	0.71	0.67	0.64	0.63	0.64	0.71	0.79	0.83	0.83	0.86	0.98	1.11	1.11	1.16	1.17	1.25	1.31	1.32	1.35	1.32	1.37	1.20	0.97
7/11/2012	0.81	0.73	0.67	0.66	0.67	0.68	0.76	0.86	0.95	0.95	1.06	1.03	1.14	1.25	1.21	1.24	1.37	1.45	1.42	1.35	1.44	1.31	1.18	1.00
7/12/2012	0.81	0.75	0.71	0.67	0.66	0.73	0.79	0.84	0.85	0.98	1.07	1.13	1.23	1.35	1.30	1.36	1.45	1.51	1.54	1.45	1.43	1.36	1.18	0.93
7/13/2012	0.80	0.74	0.70	0.67	0.64	0.68	0.80	0.96	0.98	1.00	1.07	1.14	1.23	1.28	1.40	1.44	1.43	1.42	1.42	1.40	1.35	1.27	1.20	1.04
7/14/2012	0.87	0.75	0.74	0.73	0.70	0.72	0.78	0.90	1.04	1.14	1.25	1.40	1.62	1.59	1.65	1.72	1.71	1.74	1.69	1.58	1.51	1.50	1.39	1.21
7/15/2012	1.03	0.90	0.84	0.82	0.76	0.79	0.82	0.93	1.11	1.21	1.34	1.49	1.54	1.61	1.59	1.68	1.72	1.79	1.67	1.63	1.62	1.62	1.41	1.22
7/16/2012	1.09	0.98	0.95	0.93	0.89	0.91	0.99	1.07	1.17	1.26	1.30	1.47	1.50	1.56	1.61	1.67	1.74	1.79	1.85	1.83	1.83	1.79	1.54	1.28
7/17/2012	1.12	1.02	0.96	0.90	0.90	0.89	1.00	1.10	1.15	1.32	1.50	1.61	1.71	1.74	1.77	1.78	1.85	1.94	2.01	1.84	1.86	1.75	1.56	1.39
7/18/2012	1.21	1.15	1.10	1.06	1.05	1.05	1.12	1.22	1.28	1.34	1.58	1.62	1.75	1.80	1.84	1.78	1.55	1.62	1.55	1.46	1.50	1.52	1.42	1.20
7/19/2012	1.03	0.98	0.87	0.85	0.80	0.81	0.85	0.92	0.90	0.85	0.87	0.85	0.96	0.95	0.98	1.09	1.18	1.33	1.34	1.26	1.29	1.19	1.08	0.92
7/20/2012	0.74	0.73	0.70	0.66	0.67	0.71	0.80	0.82	0.81	0.84	0.94	0.88	0.86	0.86	0.79	0.76	0.86	0.91	0.94	0.97	0.95	0.87	0.81	0.71
7/21/2012	0.62	0.54	0.52	0.48	0.49	0.49	0.52	0.64	0.72	0.85	0.89	0.95	1.03	1.09	1.16	1.13	1.09	1.15	1.11	1.12	1.08	1.02	1.01	0.76
7/22/2012	0.63	0.57	0.54	0.53	0.51	0.51	0.55	0.64	0.81	0.94	0.94	0.92	1.01	1.14	1.15	1.17	1.20	1.27	1.20	1.24	1.22	1.10	0.97	0.83
7/23/2012	0.71	0.64	0.59	0.59	0.56	0.63	0.73	0.82	0.80	0.83	0.95	1.00	1.03	1.13	1.21	1.20	1.34	1.41	1.43	1.38	1.44	1.39	1.19	1.03
7/24/2012	0.89	0.82	0.78	0.77	0.75	0.79	0.85	1.01	1.08	1.10	1.18	1.25	1.38	1.45	1.55	1.64	1.67	1.64	1.64	1.59	1.63	1.50	1.33	1.06
7/25/2012	0.88	0.79	0.72	0.67	0.67	0.68	0.75	0.80	0.83	0.86	0.83	0.92	0.90	1.00	1.06	1.12	1.27	1.32	1.33	1.29	1.34	1.33	1.21	0.96
7/26/2012	0.79	0.73	0.70	0.68	0.67	0.71	0.84	0.88	0.85	0.96	0.90	0.90	0.93	0.94	0.97	1.10	1.21	1.40	1.48	1.54	1.53	1.52	1.33	1.13
7/27/2012	0.95	0.89	0.85	0.83	0.78	0.80	0.91	1.02	1.05	1.02	1.17	1.27	1.34	1.38	1.39	1.49	1.56	1.62	1.62	1.57	1.44	1.37	1.22	1.03
7/28/2012	0.91	0.81	0.73	0.71	0.67	0.69	0.76	0.83	1.04	1.12	1.27	1.34	1.37	1.45	1.35	1.27	1.25	1.27	1.28	1.27	1.21	1.13	1.09	0.97
7/29/2012	0.79	0.75	0.71	0.68	0.67	0.67	0.71	0.82	0.94	0.95	1.02	1.06	1.10	1.10	1.07	1.13	1.07	1.10	1.08	1.14	1.10	1.03	0.98	0.79
7/30/2012	0.70	0.63	0.57	0.58	0.56	0.62	0.72	0.72	0.75	0.83	0.85	1.00	1.01	1.03	1.08	1.18	1.30	1.43	1.42	1.32	1.28	1.20	1.02	0.83
7/31/2012	0.75	0.64	0.61	0.59	0.59	0.60	0.73	0.74	0.76	0.79	0.82	0.82	0.84	0.90	0.86	0.91	0.94	1.07	1.06	1.10	1.11	1.08	0.93	0.79
8/1/2012	0.68	0.65	0.62	0.56	0.58	0.65	0.77	0.81	0.83	0.90	0.93	1.03	1.08	1.16	1.15	1.24	1.28	1.35	1.39	1.38	1.38	1.31	1.19	1.03
8/2/2012	0.86	0.80	0.75	0.74	0.73	0.75	0.84	1.00	1.04	1.10	1.21	1.26	1.28	1.40	1.42	1.56	1.61	1.68	1.72	1.72	1.68	1.64	1.41	1.17

8/3/2012	0.99	0.90	0.86	0.83	0.80	0.82	0.94	1.08	1.19	1.31	1.34	1.46	1.57	1.71	1.73	1.78	1.84	1.89	1.86	1.78	1.80	1.79	1.62	1.39
8/4/2012	1.13	1.02	0.94	0.93	0.88	0.91	0.96	1.07	1.21	1.34	1.56	1.75	1.84	1.90	1.94	2.06	2.00	1.98	1.84	1.76	1.71	1.71	1.60	1.37
8/5/2012	1.18	1.08	0.98	0.93	0.96	0.94	1.04	1.13	1.38	1.57	1.70	1.69	1.77	1.91	1.84	1.90	1.91	1.84	1.89	1.90	1.95	1.74	1.58	1.28
8/6/2012	1.14	1.05	0.97	0.92	0.92	0.95	1.05	1.11	1.29	1.32	1.36	1.44	1.55	1.59	1.57	1.64	1.73	1.77	1.78	1.63	1.57	1.46	1.27	1.01
8/7/2012	0.86	0.78	0.74	0.69	0.68	0.72	0.83	0.94	0.94	0.95	1.03	1.02	1.14	1.25	1.24	1.26	1.31	1.40	1.43	1.42	1.37	1.35	1.19	1.06
8/8/2012	0.84	0.78	0.75	0.70	0.67	0.70	0.84	0.90	1.00	1.05	1.10	1.20	1.28	1.30	1.39	1.39	1.43	1.53	1.56	1.53	1.55	1.47	1.27	1.06
8/9/2012	0.94	0.82	0.77	0.75	0.76	0.77	0.88	0.95	1.04	1.12	1.16	1.34	1.45	1.56	1.56	1.62	1.73	1.78	1.74	1.67	1.66	1.53	1.40	1.13
8/10/2012	1.00	0.92	0.87	0.86	0.83	0.85	0.98	1.08	1.18	1.21	1.33	1.43	1.51	1.42	1.43	1.38	1.33	1.41	1.43	1.47	1.45	1.34	1.26	1.09
8/11/2012	1.01	0.87	0.81	0.79	0.78	0.80	0.86	0.97	1.12	1.28	1.33	1.38	1.43	1.53	1.52	1.62	1.61	1.62	1.62	1.62	1.59	1.56	1.43	1.23
8/12/2012	1.04	0.92	0.88	0.85	0.85	0.86	0.85	0.98	1.10	1.22	1.35	1.42	1.53	1.54	1.59	1.66	1.65	1.63	1.65	1.62	1.66	1.52	1.32	1.13
8/13/2012	0.92	0.83	0.77	0.74	0.73	0.73	0.84	0.91	1.01	1.07	1.19	1.32	1.40	1.37	1.47	1.47	1.58	1.66	1.59	1.57	1.56	1.45	1.32	1.06
8/14/2012	0.91	0.82	0.74	0.74	0.71	0.71	0.81	0.84	0.92	0.92	1.07	1.13	1.27	1.30	1.39	1.40	1.49	1.67	1.58	1.50	1.58	1.38	1.29	1.05
8/15/2012	0.93	0.86	0.83	0.79	0.77	0.81	0.91	0.96	0.96	0.95	1.00	1.04	1.17	1.13	1.20	1.24	1.28	1.43	1.43	1.54	1.47	1.35	1.21	0.98
8/16/2012	0.81	0.78	0.69	0.69	0.67	0.73	0.81	0.83	0.90	0.87	1.01	1.07	1.20	1.21	1.26	1.39	1.46	1.57	1.58	1.50	1.42	1.43	1.25	1.01
8/17/2012	0.87	0.80	0.74	0.72	0.69	0.73	0.81	0.92	0.90	0.92	1.07	1.18	1.24	1.33	1.38	1.46	1.48	1.36	1.35	1.35	1.41	1.31	1.23	1.06
8/18/2012	0.93	0.85	0.80	0.75	0.73	0.70	0.74	0.83	0.92	1.02	1.07	1.03	1.05	0.98	1.01	1.01	0.97	0.98	1.02	1.00	1.02	0.98	0.89	0.74
8/19/2012	0.66	0.57	0.54	0.52	0.50	0.51	0.54	0.63	0.79	0.88	0.93	0.92	1.02	1.00	1.05	1.13	1.07	1.14	1.09	1.12	1.16	1.04	0.91	0.76
8/20/2012	0.65	0.60	0.57	0.56	0.56	0.60	0.65	0.70	0.79	0.78	0.81	0.84	0.94	0.88	0.99	1.02	1.07	1.13	1.18	1.15	1.10	1.03	0.94	0.76
8/21/2012	0.66	0.60	0.55	0.58	0.55	0.61	0.72	0.79	0.81	0.82	0.82	0.83	0.94	0.94	0.94	1.06	1.17	1.20	1.17	1.22	1.32	1.13	1.03	0.86
8/22/2012	0.72	0.68	0.63	0.61	0.59	0.61	0.68	0.75	0.81	0.81	0.85	0.87	0.98	1.03	1.03	1.10	1.21	1.25	1.26	1.24	1.23	1.16	1.05	0.85
8/23/2012	0.75	0.69	0.63	0.61	0.59	0.60	0.70	0.78	0.82	0.85	0.93	0.97	1.05	1.16	1.19	1.24	1.33	1.37	1.39	1.37	1.42	1.30	1.20	0.98
8/24/2012	0.81	0.70	0.67	0.66	0.65	0.66	0.77	0.86	0.87	0.97	1.00	1.08	1.22	1.28	1.31	1.38	1.45	1.39	1.40	1.32	1.39	1.29	1.15	0.96
8/25/2012	0.78	0.70	0.66	0.64	0.61	0.63	0.67	0.74	0.90	1.03	1.19	1.28	1.27	1.34	1.29	1.29	1.33	1.28	1.21	1.19	1.16	1.10	0.99	0.86
8/26/2012	0.68	0.64	0.59	0.58	0.55	0.56	0.61	0.71	0.88	0.89	0.97	1.00	1.07	1.18	1.28	1.31	1.39	1.38	1.29	1.26	1.26	1.14	0.99	0.79
8/27/2012	0.69	0.63	0.58	0.55	0.52	0.55	0.66	0.71	0.80	0.78	0.88	0.83	0.98	1.04	1.07	1.23	1.29	1.35	1.34	1.36	1.46	1.38	1.22	1.06
8/28/2012	0.90	0.83	0.79	0.75	0.77	0.79	0.84	0.97	0.95	0.92	0.99	1.05	1.08	1.11	1.19	1.31	1.37	1.49	1.61	1.56	1.62	1.42	1.17	0.95
8/29/2012	0.82	0.76	0.68	0.64	0.61	0.65	0.76	0.77	0.76	0.77	0.80	0.77	0.73	0.84	0.87	0.96	1.00	1.00	1.11	1.08	1.06	0.95	0.83	0.72
8/30/2012	0.61	0.55	0.50	0.49	0.52	0.53	0.67	0.66	0.72	0.69	0.68	0.70	0.75	0.84	0.83	0.91	1.07	1.17	1.20	1.16	1.13	1.08	0.92	0.75
8/31/2012	0.64	0.59	0.54	0.52	0.53	0.55	0.66	0.79	0.80	0.86	0.91	0.91	1.02	1.15	1.16	1.29	1.39	1.44	1.40	1.29	1.35	1.23	1.22	1.03
9/1/2012	0.93	0.86	0.82	0.78	0.73	0.73	0.79	0.90	1.02	1.18	1.28	1.31	1.35	1.40	1.43	1.46	1.57	1.47	1.33	1.29	1.25	1.14	1.05	0.90
9/2/2012	0.79	0.73	0.69	0.64	0.60	0.61	0.64	0.77	0.88	0.93	1.05	1.04	1.13	1.14	1.07	1.08	1.08	1.04	1.06	1.08	1.03	1.00	0.96	0.77
9/3/2012	0.68	0.64	0.58	0.57	0.53	0.52	0.57	0.64	0.82	0.91	0.96	0.99	1.02	1.18	1.15	1.20	1.24	1.20	1.18	1.24	1.25	1.07	0.92	0.76
9/4/2012	0.64	0.62	0.58	0.60	0.56	0.60	0.79	0.79	0.76	0.80	0.78	0.77	0.79	0.79	0.81	0.83	0.95	1.12	1.23	1.28	1.29	1.25	1.11	0.94
9/5/2012	0.78	0.74	0.71	0.71	0.73	0.76	0.91	1.00	0.98	0.97	0.98	1.01	1.01	1.02	0.98	1.04	1.12	1.24	1.40	1.44	1.43	1.36	1.19	0.98
9/6/2012	0.86	0.76	0.72	0.68	0.68	0.70	0.85	0.82	0.84	0.88	0.85	0.90	0.90	0.93	0.87	0.97	1.02	1.06	1.16	1.23	1.31	1.14	0.99	0.83
9/7/2012	0.76	0.70	0.66	0.64	0.63	0.68	0.81	0.89	0.88	0.91	0.98	0.97	1.04	1.18	1.22	1.38	1.46	1.49	1.45	1.38	1.45	1.38	1.20	1.01
9/8/2012	0.91	0.83	0.80	0.76	0.76	0.74	0.78	0.91	1.07	1.17	1.16	1.18	1.33	1.33	1.32	1.39	1.45	1.48	1.45	1.50	1.53	1.43	1.18	0.97
9/9/2012	0.85	0.72	0.66	0.65	0.61	0.64	0.63	0.74	0.84	0.93	1.01	0.96	1.00	0.98	1.02	1.07	1.08	1.05	1.10	1.10	1.10	0.99	0.88	0.68
9/10/2012	0.58	0.54	0.51	0.49	0.51	0.56	0.70	0.71	0.68	0.72	0.76	0.70	0.72	0.69	0.66	0.76	0.80	0.95	0.94	0.99	0.99	0.89	0.76	0.61
9/11/2012	0.54	0.50	0.46	0.45	0.45	0.50	0.61	0.67	0.70	0.64	0.69	0.76	0.76	0.71	0.71	0.74	0.79	0.88	0.90	1.08	1.01	0.90	0.82	0.64
9/12/2012	0.51	0.48	0.45	0.45	0.45	0.51	0.68	0.70	0.67	0.64	0.69	0.72	0.68	0.73	0.72	0.79	0.89	0.99	0.99	1.06	1.06	0.95	0.82	0.68
9/13/2012	0.58	0.52	0.48	0.49	0.48	0.54	0.70	0.72	0.72	0.73	0.68	0.72	0.72	0.80	0.86	0.89	0.98	1.06	1.02	1.07	1.12	0.98	0.86	0.73
9/14/2012	0.61	0.56	0.52	0.51	0.50	0.53	0.70	0.73	0.67	0.66	0.71	0.66	0.72	0.87	0.87	0.88	0.97	0.99	0.98	0.96	0.98	0.97	0.88	0.69
9/15/2012	0.66	0.57	0.51	0.50	0.49	0.52	0.60	0.65	0.77	0.87	0.91	0.84	0.88	0.90	0.87	0.84	0.89	0.99	0.87	0.97	0.92	0.85	0.80	0.68
9/16/2012	0.59	0.55	0.46	0.46	0.47	0.50	0.56	0.66	0.82	0.87	0.87	0.88	0.85	0.79	0.81	0.82	0.83	0.95	0.95	1.00	0.98	0.90	0.76	0.63
9/17/2012	0.49	0.45	0.44	0.45	0.45	0.50	0.65	0.69	0.70	0.72	0.73	0.67	0.70	0.73	0.67	0.76	0.83	0.90	0.94	1.04	1.04	0.93	0.82	0.62
9/18/2012	0.53	0.47	0.46	0.46	0.47	0.53	0.64	0.74	0.70	0.64	0.68	0.68	0.68	0.73	0.71	0.78	0.87	0.99	1.08	1.08	1.05	0.99	0.85	0.73
9/19/2012	0.60	0.60	0.54	0.53	0.54	0.56	0.74	0.75	0.66	0.68	0.66	0.68	0.74	0.68	0.71	0.74	0.79	0.88	0.96	0.98	0.93	0.82	0.75	0.60
9/20/2012	0.51	0.49	0.44	0.46	0.47	0.54	0.72	0.68	0.67	0.64	0.66	0.63	0.59	0.57	0.63	0.65	0.74	0.85	0.87	1.00	0.98	0.88	0.70	0.62
9/21/2012	0.49	0.48	0.43	0.44	0.44	0.53	0.62	0.71	0.63	0.67	0.61	0.63	0.61	0.58	0.63	0.65	0.66	0.82	0.85	0.95	0.95	0.84	0.72	0.65
9/22/2012	0.55	0.49	0.45	0.43	0.46	0.48	0.52	0.63	0.78	0.84	0.79	0.79	0.86	0.78	0.82	0.80	0.81	0.81	0.87	1.02	0.90	0.81	0.78	0.66
9/23/2012	0.60	0.55	0.48	0.45	0.46	0.52	0.57	0.63	0.86	0.85	0.82	0.83	0.90	0.91	0.81	0.84	0.82	0.84	0.94	1.10	1.07	0.91	0.74	0.66
9/24/2012	0.57	0.48	0.44	0.44	0.45	0.49	0.66	0.68	0.71	0.63	0.58	0.62	0.67	0.62	0.63	0.66	0.75	0.85	1.00	1.05	0.97	0.85	0.74	0.61
9/25/2012	0.51	0.48	0.45	0.46	0.44	0.52	0.70	0.71	0.63	0.62	0.59	0.68	0.71	0.64	0.63	0.63	0.72	0.78	0.97	1.06	1.02	0.84	0.74	0.57
9/26/2012	0.50	0.47	0.43	0.43	0.47	0.51	0.63	0.69	0.70	0.74	0.67	0.71	0.72	0.69	0.63	0.71	0.82	0.87	1.00	1.05	0.96	0.92	0.77	0.62
9/27/2012	0.54	0.51	0.48	0.47	0.46	0.54	0.67	0.71	0.69	0.66	0.70	0.67	0.72	0.73	0.64	0.66	0.78	0.87	0.95	1.05	1.04	0.92	0.80	0.64
9/28/2012	0.51	0.47	0.46	0.46	0.47	0.53	0.67	0.78	0.72	0.66	0.70	0.73	0.73	0.73	0.68	0.72	0.82	0.92	0.95	0.96	0.87	0.82	0.73	0.64
9/29/2012	0.53	0.48	0.45	0.44	0.46	0.49	0.50	0.62	0.72	0.81	0.83	0.83	0.80	0.84	0.76	0.78	0.91	0.95	0.90	0.94	0.88	0.82	0.78	0.66
9/30/2012	0.54	0.49	0.45	0.44	0.42	0.47	0.49	0.62	0.75	0.81	0.99	0.97	0.93	0.96	0.92	0.84	0.86	0.90	1.05	1.14	1.01	0.90	0.79	0.63
10/1/2012	0.53	0.44	0.44	0.42	0.43	0.53	0.71	0.73	0.68	0.67	0.58	0.64	0.70	0.61	0.64	0.66	0.71	0.83	0.94	0.92	0.95	0.88	0.70	0.59
10/2/2012	0.50	0.46	0.48	0.43	0.43	0.52	0.69	0.68	0.66	0.61	0.62	0.61	0.55	0.64	0.62	0.64	0.77	0.95	0.96	0.99	0.92	0.83	0.77	0.63
10/3/2012	0.51	0.43	0.41	0.43	0.43	0.51	0.70	0.72	0.67	0.69	0.65	0.65	0.60	0.67	0.62	0.66	0.77	0.93	0.99	0.99	0.93	0.88	0.78	0.63
10/4/2012	0.48	0.47	0.42	0.42	0.44	0.52	0.67	0.71	0.69	0.67	0.66	0.76	0.64	0.66	0.67	0.79	0.78	0.91	0.99	1.07	0.96	0.87	0.72	0.61
10/5/2012	0.52	0.48	0.42	0.42	0.45	0.52	0.68	0.71	0.70	0.66	0.64	0.71	0.61	0.64	0.72	0.71	0.73	0.81	0.96	1.01	0.98	0.90	0.77	0.68
10/6/2012	0.54	0.47	0.45	0.43	0.44	0.47	0.49	0.61	0.71	0.84	0.89	0.83	0.84	0.82	0.82	0.86	0.88	0.88	0.89	0.96	0.91	0.83	0.76	0.62
10/7/2012	0.52	0.46	0.45	0.42	0.44	0.47	0.51	0.61	0.80	0.81	0.88	0.86	0.86	0.91	0.89	0.88	0.92	0.97	1.00	0.93	0.90	0.83	0.71	0.63
10/8/2012	0.50	0.47	0.44	0.41	0.46	0.49	0.56	0.68	0.83	0.78	0.83	0.79	0.79	0.82	0.74	0.79	0.86	0.99	1.06	1.12	0.96	0.88	0.76	0.61
10/9/2012	0.49	0.49	0.43	0.40	0.43	0.54	0.70	0.76	0.69	0.67	0.68	0.70	0.65	0.70	0.66	0.64	0.74	0.96	1.12	1.07	1.05	0.90	0.76	0.62
10/10/2012	0.50	0.48	0.46	0.43	0.45	0.51	0.70	0.73	0.71	0.66	0.69	0.69	0.73	0.66	0.69	0.78	0.84	0.91	0.95	0.98	0.93	0.92	0.75	0.57
10/11/2012	0.49	0.44	0.44	0.43	0.45	0.54	0.67	0.75	0.74	0.69	0.69	0.60	0.65	0.65	0.61	0.59	0.68	0.79	0.92	1.02	0.94	0.87	0.74	0.63
10/12/2012	0.52	0.46	0.46	0.48	0.48	0.54	0.74	0.78	0.68	0.68	0.71	0.66	0.67	0.70	0.68	0.70	0.71	0.85	1.00	1.03	0.97	0.94	0.90	0.71
10/13/2012	0.58	0.51	0.52	0.50	0.54	0.57	0.63	0.74	0.86	0.90	0.88	0.90	0.90	0.73	0.74	0.74	0.86	0.97	1.04	1.01	1.01	0.88	0.78	0.72
10/14/2012	0.63	0.55	0.50	0.50	0.51	0.53	0.55	0.62	0.84	0.96	0.96	0.90	0.93	0.89	0.80	0.85	0.91	0.97	1.04	1.10	0.95	0.85	0.74	0.60
10/15/2012	0.49	0.47	0.46	0.43	0.43	0.50	0.72	0.67	0.65	0.66	0.59	0.67	0.67	0.66	0.66	0.69	0.71	0.85	1.05	1.07	1.07	0.90	0.71	0.59

10/16/2012	0.49	0.46	0.43	0.45	0.48	0.52	0.69	0.75	0.66	0.63	0.67	0.61	0.63	0.61	0.62	0.62	0.71	0.87	0.97	1.05	1.00	0.89	0.78	0.62
10/17/2012	0.52	0.50	0.46	0.48	0.48	0.55	0.77	0.85	0.73	0.73	0.68	0.66	0.61	0.61	0.58	0.64	0.74	0.92	1.07	1.03	0.99	0.85	0.75	0.59
10/18/2012	0.51	0.51	0.48	0.47	0.50	0.62	0.76	0.85	0.79	0.68	0.68	0.60	0.61	0.60	0.59	0.70	0.71	0.87	0.95	1.06	1.01	0.92	0.72	0.63
10/19/2012	0.51	0.50	0.46	0.45	0.48	0.56	0.70	0.72	0.67	0.73	0.69	0.74	0.66	0.62	0.64	0.72	0.78	0.90	0.97	0.96	0.87	0.82	0.72	0.63
10/20/2012	0.49	0.45	0.43	0.44	0.44	0.47	0.48	0.58	0.69	0.82	0.83	0.84	0.80	0.82	0.73	0.72	0.77	0.84	1.00	0.97	0.97	0.81	0.75	0.61
10/21/2012	0.53	0.47	0.48	0.46	0.46	0.47	0.52	0.61	0.77	0.86	0.87	0.89	0.80	0.80	0.79	0.83	0.82	0.91	0.99	1.06	1.01	0.89	0.73	0.61
10/22/2012	0.50	0.46	0.45	0.46	0.47	0.56	0.73	0.79	0.72	0.68	0.66	0.62	0.59	0.64	0.62	0.63	0.75	0.94	1.02	1.07	0.90	0.80	0.73	0.58
10/23/2012	0.52	0.45	0.44	0.48	0.46	0.53	0.69	0.82	0.72	0.64	0.68	0.66	0.60	0.57	0.56	0.63	0.75	0.89	1.02	1.02	0.90	0.86	0.71	0.58
10/24/2012	0.50	0.47	0.45	0.45	0.46	0.53	0.72	0.81	0.71	0.73	0.65	0.62	0.65	0.62	0.65	0.67	0.75	0.88	0.93	0.98	0.98	0.93	0.76	0.64
10/25/2012	0.52	0.51	0.48	0.46	0.51	0.59	0.73	0.76	0.72	0.66	0.63	0.57	0.60	0.55	0.58	0.64	0.74	0.88	0.99	1.04	1.01	0.93	0.77	0.62
10/26/2012	0.49	0.47	0.44	0.46	0.49	0.54	0.72	0.80	0.73	0.67	0.68	0.63	0.61	0.57	0.63	0.62	0.66	0.80	0.94	0.96	0.85	0.83	0.74	0.61
10/27/2012	0.54	0.52	0.47	0.45	0.44	0.50	0.53	0.61	0.77	0.79	0.82	0.83	0.81	0.82	0.73	0.78	0.84	0.96	1.02	1.05	0.93	0.95	0.76	0.64
10/28/2012	0.54	0.51	0.49	0.47	0.47	0.50	0.52	0.62	0.80	0.88	0.96	0.95	0.99	1.00	0.94	0.96	1.03	1.08	1.18	1.13	1.15	0.88	0.83	0.68
10/29/2012	0.59	0.50	0.45	0.47	0.47	0.55	0.62	0.72	0.84	0.98	0.98	1.00	1.06	0.99	0.97	0.80	0.85	0.74	0.73	0.66	0.64	0.58	0.50	0.41
10/30/2012	0.34	0.33	0.33	0.33	0.33	0.38	0.42	0.48	0.53	0.54	0.60	0.55	0.52	0.54	0.51	0.56	0.69	0.79	0.80	0.80	0.80	0.69	0.59	0.50
10/31/2012	0.41	0.39	0.37	0.37	0.39	0.41	0.60	0.59	0.53	0.61	0.58	0.58	0.65	0.61	0.60	0.65	0.72	0.83	0.85	0.81	0.86	0.83	0.68	0.55
11/1/2012	0.48	0.43	0.42	0.41	0.43	0.51	0.67	0.70	0.67	0.63	0.67	0.68	0.60	0.55	0.56	0.62	0.71	0.91	0.91	0.89	0.92	0.82	0.75	0.62
11/2/2012	0.51	0.46	0.45	0.45	0.45	0.51	0.70	0.74	0.71	0.70	0.68	0.61	0.67	0.69	0.64	0.65	0.71	0.84	0.96	0.96	0.88	0.83	0.75	0.65
11/3/2012	0.55	0.51	0.50	0.48	0.50	0.53	0.56	0.66	0.83	0.88	0.85	0.80	0.82	0.79	0.79	0.77	0.75	0.91	0.96	0.97	0.87	0.85	0.79	0.69
11/4/2012	0.59	0.52	0.47	0.48	0.53	0.57	0.65	0.86	0.92	0.91	0.87	0.79	0.74	0.79	0.74	0.82	0.87	1.00	1.03	1.00	1.04	0.93	0.73	0.58
11/5/2012	0.54	0.51	0.48	0.49	0.53	0.60	0.81	0.84	0.75	0.73	0.73	0.68	0.67	0.68	0.63	0.65	0.91	1.09	1.15	1.14	1.04	0.90	0.77	0.66
11/6/2012	0.59	0.55	0.55	0.54	0.60	0.71	0.82	0.90	0.84	0.82	0.79	0.72	0.70	0.63	0.65	0.73	0.88	1.01	1.05	1.05	1.00	0.88	0.82	0.70
11/7/2012	0.62	0.58	0.56	0.54	0.58	0.67	0.79	0.89	0.80	0.76	0.78	0.79	0.82	0.88	0.80	0.87	1.05	1.17	1.22	1.18	1.06	0.96	0.86	0.72
11/8/2012	0.64	0.60	0.61	0.61	0.62	0.74	0.87	0.92	0.81	0.82	0.87	0.78	0.79	0.75	0.75	0.87	0.96	1.15	1.16	1.05	1.07	0.92	0.79	0.68
11/9/2012	0.60	0.57	0.58	0.55	0.61	0.65	0.82	0.82	0.75	0.70	0.68	0.63	0.66	0.66	0.62	0.66	0.79	0.89	1.03	1.00	0.97	0.83	0.74	0.62
11/10/2012	0.57	0.54	0.53	0.51	0.53	0.61	0.65	0.71	0.86	0.85	0.75	0.78	0.74	0.71	0.75	0.78	0.88	1.02	0.94	0.93	0.95	0.87	0.72	0.69
11/11/2012	0.54	0.50	0.48	0.48	0.51	0.54	0.57	0.65	0.78	0.85	0.80	0.82	0.80	0.83	0.81	0.74	0.90	1.04	1.01	0.90	0.84	0.76	0.62	0.55
11/12/2012	0.49	0.44	0.45	0.43	0.46	0.51	0.63	0.72	0.80	0.76	0.74	0.73	0.77	0.66	0.69	0.74	0.88	1.00	0.97	0.94	0.90	0.75	0.68	0.54
11/13/2012	0.45	0.45	0.44	0.41	0.44	0.50	0.63	0.74	0.69	0.62	0.58	0.55	0.64	0.62	0.64	0.65	0.78	0.93	0.97	1.00	0.97	0.81	0.74	0.63
11/14/2012	0.56	0.50	0.51	0.51	0.51	0.62	0.75	0.78	0.76	0.65	0.68	0.64	0.59	0.60	0.60	0.62	0.76	1.02	1.05	1.02	0.99	0.94	0.83	0.71
11/15/2012	0.57	0.53	0.51	0.50	0.58	0.61	0.81	0.83	0.80	0.72	0.70	0.71	0.69	0.66	0.70	0.77	0.88	1.07	1.12	1.05	1.04	0.93	0.80	0.66
11/16/2012	0.58	0.53	0.54	0.55	0.56	0.63	0.80	0.84	0.75	0.68	0.69	0.65	0.68	0.66	0.75	0.83	0.89	1.03	1.02	1.04	0.95	0.86	0.84	0.68
11/17/2012	0.58	0.53	0.53	0.57	0.54	0.58	0.70	0.78	0.90	0.90	0.91	0.82	0.79	0.76	0.73	0.77	0.85	0.97	1.02	1.00	0.93	0.85	0.81	0.68
11/18/2012	0.58	0.55	0.57	0.53	0.56	0.59	0.66	0.78	0.92	0.84	0.95	0.91	0.87	0.75	0.79	0.82	1.06	1.13	1.17	1.15	1.09	0.96	0.80	0.68
11/19/2012	0.59	0.53	0.53	0.53	0.56	0.64	0.83	0.82	0.82	0.80	0.74	0.73	0.70	0.74	0.71	0.73	0.90	1.12	1.13	1.12	1.05	0.93	0.76	0.67
11/20/2012	0.58	0.54	0.55	0.56	0.59	0.71	0.87	0.84	0.83	0.77	0.73	0.73	0.67	0.72	0.66	0.69	0.91	1.05	1.05	1.05	0.96	0.95	0.85	0.70
11/21/2012	0.59	0.55	0.54	0.54	0.59	0.66	0.80	0.85	0.82	0.79	0.76	0.65	0.71	0.72	0.72	0.77	0.95	1.18	1.28	1.22	1.11	1.03	0.87	0.72
11/22/2012	0.64	0.61	0.59	0.55	0.59	0.65	0.72	0.84	1.02	1.12	1.15	1.14	1.08	0.97	0.81	0.76	0.77	0.82	0.86	0.96	0.91	0.89	0.75	0.70
11/23/2012	0.59	0.55	0.51	0.52	0.57	0.59	0.67	0.77	0.85	0.84	0.76	0.76	0.75	0.68	0.69	0.72	0.92	0.99	0.99	0.96	0.96	0.87	0.74	0.63
11/24/2012	0.55	0.50	0.49	0.50	0.47	0.53	0.58	0.69	0.84	0.87	0.81	0.87	0.88	0.90	0.83	0.85	1.00	1.06	1.06	1.05	1.01	0.89	0.90	0.76
11/25/2012	0.68	0.60	0.59	0.60	0.65	0.66	0.69	0.82	0.93	0.94	1.00	0.96	0.93	0.89	0.98	0.96	1.07	1.14	1.25	1.21	1.08	0.94	0.87	0.71
11/26/2012	0.64	0.58	0.56	0.55	0.56	0.67	0.89	0.90	0.84	0.76	0.73	0.73	0.70	0.67	0.73	0.75	0.98	1.20	1.14	1.11	1.04	0.93	0.77	0.70
11/27/2012	0.62	0.52	0.56	0.54	0.59	0.66	0.83	0.87	0.78	0.78	0.80	0.78	0.79	0.79	0.78	0.86	0.96	1.19	1.22	1.18	1.14	0.99	0.87	0.72
11/28/2012	0.64	0.59	0.57	0.57	0.61	0.71	0.88	0.89	0.85	0.84	0.80	0.73	0.74	0.69	0.74	0.88	1.02	1.17	1.17	1.10	1.04	0.99	0.86	0.71
11/29/2012	0.65	0.58	0.60	0.60	0.64	0.74	0.86	0.89	0.82	0.73	0.72	0.73	0.73	0.68	0.70	0.72	0.93	1.10	1.20	1.18	1.13	0.99	0.79	0.67
11/30/2012	0.61	0.59	0.56	0.57	0.62	0.66	0.82	0.89	0.81	0.75	0.75	0.72	0.71	0.62	0.68	0.78	0.91	1.03	1.18	1.11	1.06	0.97	0.84	0.72
12/1/2012	0.66	0.61	0.62	0.61	0.63	0.67	0.70	0.79	0.95	1.02	1.06	1.02	1.05	1.02	0.98	1.07	1.10	1.18	1.14	1.06	1.07	1.01	0.91	0.79
12/2/2012	0.64	0.60	0.59	0.59	0.58	0.59	0.64	0.75	0.87	0.93	0.92	0.98	0.94	0.93	0.95	0.99	1.09	1.14	1.14	1.13	1.03	0.93	0.77	0.69
12/3/2012	0.60	0.54	0.51	0.49	0.51	0.60	0.73	0.80	0.74	0.69	0.72	0.78	0.68	0.67	0.65	0.68	0.83	1.09	1.10	1.08	0.98	0.90	0.76	0.63
12/4/2012	0.57	0.52	0.52	0.52	0.56	0.69	0.81	0.85	0.75	0.71	0.76	0.75	0.69	0.71	0.74	0.73	0.91	1.13	1.13	1.13	1.05	0.89	0.82	0.68
12/5/2012	0.56	0.50	0.50	0.51	0.52	0.58	0.75	0.76	0.76	0.73	0.68	0.62	0.62	0.59	0.58	0.65	0.90	1.06	1.12	1.14	1.06	1.00	0.86	0.71
12/6/2012	0.64	0.57	0.57	0.59	0.60	0.69	0.87	0.96	0.91	0.83	0.79	0.77	0.71	0.64	0.72	0.76	0.97	1.21	1.23	1.15	1.15	1.13	0.95	0.77
12/7/2012	0.69	0.65	0.63	0.63	0.66	0.70	0.92	0.94	0.92	0.81	0.82	0.77	0.82	0.88	0.79	0.88	0.97	1.09	1.10	1.08	1.01	0.93	0.85	0.73
12/8/2012	0.65	0.57	0.54	0.53	0.52	0.58	0.65	0.71	0.84	0.85	0.89	0.92	0.83	0.86	0.89	0.92	1.03	1.10	1.09	1.05	0.97	0.92	0.85	0.78
12/9/2012	0.62	0.55	0.51	0.51	0.51	0.58	0.59	0.73	0.86	0.90	0.88	0.87	0.84	0.86	0.80	0.87	1.01	1.18	1.18	1.14	1.06	0.93	0.82	0.64
12/10/2012	0.61	0.53	0.51	0.52	0.50	0.59	0.72	0.77	0.82	0.83	0.72	0.70	0.78	0.75	0.74	0.84	0.95	1.12	1.07	1.06	1.03	0.92	0.79	0.61
12/11/2012	0.52	0.46	0.44	0.43	0.46	0.54	0.71	0.78	0.76	0.70	0.66	0.71	0.61	0.62	0.59	0.67	0.89	1.17	1.19	1.22	1.07	1.02	0.87	0.74
12/12/2012	0.62	0.58	0.55	0.55	0.63	0.68	0.81	0.84	0.78	0.76	0.76	0.76	0.69	0.66	0.66	0.85	1.00	1.18	1.20	1.15	1.03	1.01	0.94	0.76
12/13/2012	0.65	0.65	0.60	0.63	0.64	0.73	0.89	0.95	0.90	0.84	0.78	0.77	0.73	0.66	0.67	0.75	0.97	1.20	1.30	1.28	1.25	1.06	0.94	0.82
12/14/2012	0.70	0.63	0.63	0.62	0.65	0.72	0.90	0.95	0.89	0.85	0.83	0.81	0.74	0.71	0.68	0.77	0.95	1.10	1.14	1.10	1.10	1.06	0.92	0.79
12/15/2012	0.74	0.63	0.59	0.64	0.61	0.65	0.70	0.79	0.94	1.02	0.95	0.87	0.89	0.87	0.89	0.97	1.16	1.29	1.18	1.17	1.15	1.06	0.97	0.79
12/16/2012	0.68	0.66	0.59	0.60	0.62	0.61	0.68	0.81	0.99	1.04	1.07	1.04	1.06	1.11	1.09	1.18	1.23	1.28	1.19	1.26	1.19	1.14	0.97	0.79
12/17/2012	0.68	0.58	0.56	0.57	0.59	0.69	0.82	0.90	0.88	0.84	0.87	0.82	0.82	0.77	0.79	0.91	1.07	1.20	1.27	1.27	1.21	1.04	0.89	0.67
12/18/2012	0.63	0.57	0.52	0.54	0.55	0.63	0.79	0.82	0.83	0.74	0.69	0.74	0.72	0.69	0.72	0.81	0.96	1.16	1.25	1.11	1.11	1.05	0.87	0.70
12/19/2012	0.63	0.54	0.53	0.53	0.54	0.66	0.80	0.84	0.88	0.82	0.79	0.71	0.70	0.65	0.68	0.75	0.90	1.17	1.18	1.20	1.17	1.06	0.91	0.75
12/20/2012	0.68	0.62	0.60	0.58	0.63	0.70	0.88	0.94	0.85	0.79	0.81	0.74	0.67	0.66	0.67	0.78	0.99	1.11	1.20	1.17	1.10	1.05	0.89	0.78
12/21/2012	0.66	0.58	0.57	0.59	0.57	0.69	0.77	0.84	0.93	0.90	0.85	0.93	0.91	0.82	0.80	0.84	0.96	1.16	1.17	1.13	1.13	1.09	0.98	0.79
12/22/2012	0.70	0.64	0.59	0.59	0.59	0.61	0.66	0.78	0.88	1.06	1.06	1.02	0.96	0.93	0.97	1.06	1.19	1.34	1.37	1.33	1.29	1.21	1.05	0.94
12/23/2012	0.79	0.71	0.67	0.66	0.67	0.66	0.74	0.82	0.96	1.03	1.07	1.01	0.96	1.00	1.00	0.99	1.07	1.26	1.28	1.27	1.23	1.15	1.03	0.92
12/24/2012	0.75	0.70	0.65	0.68	0.69	0.72	0.81	0.88	1.00	1.02	1.01	1.00	1.00	0.96	0.95	1.10	1.19	1.20	1.16	1.16	1.11	1.10	1.08	0.88
12/25/2012	0.76	0.66	0.65	0.65	0.62	0.66	0.76	0.91	1.10	1.19	1.18	1.19	1.20	1.11	1.02	1.01	1.03	1.09	1.13	1.14	1.10	1.02	0.93	0.77
12/26/2012	0.69	0.67	0.67	0.66	0.66	0.72	0.82	0.91	0.95	0.93	0.96	0.95	0.96	0.99	0.97	1.03	1.20	1.28	1.26	1.34	1.25	1.17	1.00	0.83
12/27/2012	0.72	0.65	0.65	0.60	0.63	0.68	0.75	0.78	0.92	0.88	0.90	0.90	0.92	0.89	0.91	0.97	1.13	1.26	1.29	1.30	1.15	1.08	0.90	0.78
12/28/2012	0.71	0.67	0.64	0.63	0.64	0.74	0.80	0.88	0.91	0.92	0.95	0.94	0.90	0.84	0.87	0.95	1.01	1.23	1.23	1.18	1.15	1.07	0.95	0.76

12/29/2012	0.69	0.65	0.68	0.65	0.65	0.68	0.72	0.81	0.99	1.09	1.11	1.12	1.09	1.09	1.06	1.11	1.20	1.33	1.26	1.29	1.18	1.07	0.95	0.86
12/30/2012	0.73	0.66	0.64	0.67	0.64	0.67	0.72	0.79	0.93	1.03	1.08	1.09	1.09	1.10	1.04	1.11	1.30	1.28	1.29	1.33	1.28	1.12	1.01	0.89
12/31/2012	0.77	0.75	0.72	0.73	0.75	0.78	0.84	0.96	1.03	1.06	1.09	1.00	1.01	1.04	0.98	1.03	1.21	1.29	1.25	1.14	1.07	1.04	0.97	0.86
1/1/2013	0.82	0.77	0.70	0.67	0.71	0.70	0.72	0.79	0.90	0.96	1.09	1.08	1.07	1.02	1.03	1.15	1.26	1.38	1.34	1.32	1.17	1.12	1.01	0.84
1/2/2013	0.78	0.73	0.70	0.72	0.75	0.81	0.95	1.09	1.06	0.97	0.97	0.95	0.94	0.93	0.99	1.06	1.20	1.40	1.39	1.42	1.36	1.23	1.04	0.94
1/3/2013	0.82	0.79	0.77	0.77	0.82	0.90	1.05	1.07	1.03	1.01	0.94	0.97	0.89	0.83	0.84	0.99	1.13	1.43	1.55	1.43	1.32	1.28	1.03	0.89
1/4/2013	0.81	0.77	0.75	0.79	0.82	0.84	1.05	1.13	1.02	1.01	0.93	0.90	0.88	0.86	0.90	0.90	1.08	1.29	1.30	1.23	1.18	1.07	0.97	0.85
1/5/2013	0.82	0.74	0.70	0.72	0.71	0.73	0.80	0.85	0.96	1.01	1.05	0.95	0.92	1.04	0.95	0.97	1.05	1.15	1.16	1.16	1.10	1.07	0.96	0.85
1/6/2013	0.78	0.73	0.70	0.69	0.68	0.72	0.73	0.85	0.99	1.00	1.09	1.09	1.08	1.02	0.94	0.99	1.06	1.23	1.26	1.20	1.16	1.09	0.90	0.79
1/7/2013	0.70	0.67	0.67	0.67	0.67	0.79	0.90	0.96	0.97	0.95	0.95	0.86	0.89	0.83	0.77	0.85	1.05	1.27	1.29	1.26	1.19	1.10	0.94	0.81
1/8/2013	0.73	0.71	0.67	0.69	0.69	0.77	0.89	0.95	0.93	0.95	0.87	0.82	0.85	0.79	0.75	0.81	0.98	1.23	1.19	1.23	1.08	0.97	0.85	0.73
1/9/2013	0.65	0.62	0.58	0.63	0.64	0.75	0.88	0.93	0.90	0.89	0.85	0.81	0.83	0.79	0.80	0.88	1.02	1.23	1.19	1.17	1.12	1.02	0.85	0.75
1/10/2013	0.64	0.59	0.57	0.58	0.60	0.67	0.85	0.89	0.87	0.81	0.79	0.82	0.80	0.79	0.72	0.78	0.86	1.09	1.15	1.19	1.09	0.98	0.85	0.78
1/11/2013	0.67	0.59	0.62	0.63	0.65	0.74	0.93	0.96	0.94	0.85	0.85	0.87	0.90	0.83	0.94	0.94	0.97	1.11	1.23	1.15	1.01	0.93	0.87	0.73
1/12/2013	0.66	0.62	0.56	0.61	0.58	0.61	0.64	0.71	0.84	0.96	0.97	0.93	0.90	0.91	1.02	0.98	1.04	1.19	1.15	1.04	0.95	0.87	0.75	0.74
1/13/2013	0.61	0.54	0.54	0.51	0.53	0.57	0.61	0.71	0.85	0.90	0.89	0.96	0.95	0.90	0.95	0.99	1.00	1.07	1.10	1.11	1.11	0.94	0.80	0.65
1/14/2013	0.56	0.50	0.50	0.49	0.50	0.58	0.70	0.79	0.76	0.79	0.78	0.81	0.70	0.66	0.62	0.73	0.90	1.07	1.09	1.10	1.03	0.91	0.83	0.67
1/15/2013	0.57	0.55	0.55	0.55	0.57	0.66	0.77	0.84	0.86	0.77	0.73	0.78	0.80	0.83	0.82	0.80	0.95	1.13	1.14	1.17	1.09	1.01	0.79	0.70
1/16/2013	0.66	0.59	0.59	0.60	0.62	0.68	0.86	0.93	0.94	0.85	0.89	0.87	0.86	0.86	0.88	1.03	1.08	1.30	1.28	1.26	1.18	1.03	0.92	0.82
1/17/2013	0.69	0.65	0.65	0.64	0.65	0.76	0.90	0.92	0.85	0.82	0.84	0.89	0.86	0.73	0.72	0.80	0.89	1.09	1.07	1.12	1.06	1.09	0.88	0.75
1/18/2013	0.65	0.65	0.62	0.66	0.66	0.78	0.92	1.02	1.03	0.98	0.95	0.96	0.93	0.87	0.87	0.90	1.04	1.24	1.28	1.26	1.17	1.08	1.01	0.94
1/19/2013	0.88	0.81	0.81	0.82	0.78	0.80	0.89	0.93	1.03	1.05	1.03	0.97	1.05	0.93	1.00	0.98	1.08	1.14	1.12	1.17	1.01	0.97	0.88	0.80
1/20/2013	0.68	0.63	0.61	0.62	0.64	0.65	0.74	0.79	0.88	0.96	0.95	1.02	0.93	0.91	1.02	0.95	0.96	1.10	1.13	1.09	1.01	1.02	0.91	0.78
1/21/2013	0.72	0.68	0.64	0.68	0.66	0.72	0.83	0.95	1.00	1.06	1.16	0.98	0.93	1.02	0.94	1.00	1.10	1.28	1.31	1.36	1.29	1.10	0.93	0.82
1/22/2013	0.74	0.71	0.67	0.69	0.70	0.80	0.95	0.98	1.03	0.99	0.97	0.96	0.91	0.88	0.87	0.97	1.04	1.28	1.23	1.22	1.29	1.22	1.03	0.92
1/23/2013	0.85	0.83	0.86	0.83	0.86	0.92	1.12	1.22	1.11	1.08	1.03	1.03	0.99	1.00	1.05	1.07	1.19	1.36	1.47	1.47	1.37	1.22	1.12	1.00
1/24/2013	0.92	0.89	0.88	0.90	0.90	1.03	1.21	1.27	1.23	1.12	1.08	1.06	0.99	0.99	0.98	0.98	1.13	1.32	1.42	1.47	1.32	1.24	1.14	1.07
1/25/2013	0.95	0.90	0.87	0.88	0.93	1.04	1.14	1.17	1.09	1.07	1.06	0.97	0.94	0.94	0.92	1.01	1.14	1.24	1.31	1.27	1.21	1.12	0.97	0.86
1/26/2013	0.86	0.79	0.79	0.76	0.77	0.82	0.87	1.00	1.07	1.18	1.19	1.18	1.15	1.08	1.14	1.00	1.08	1.28	1.30	1.34	1.19	1.14	1.04	0.94
1/27/2013	0.85	0.86	0.81	0.81	0.82	0.85	0.90	1.02	1.09	1.11	1.14	1.18	1.09	1.16	1.17	1.19	1.30	1.34	1.33	1.36	1.25	1.11	1.03	0.86
1/28/2013	0.81	0.77	0.74	0.72	0.73	0.83	1.02	1.00	1.00	0.94	0.97	0.96	0.99	0.97	0.96	1.00	1.12	1.31	1.33	1.29	1.20	1.09	0.95	0.78
1/29/2013	0.68	0.65	0.63	0.64	0.68	0.78	0.89	0.95	0.89	0.87	0.89	0.81	0.83	0.82	0.77	0.87	1.06	1.20	1.17	1.15	1.07	1.02	0.91	0.71
1/30/2013	0.60	0.59	0.55	0.58	0.59	0.68	0.81	0.88	0.89	0.78	0.75	0.79	0.82	0.67	0.79	0.79	0.85	1.00	1.07	1.05	1.00	0.82	0.78	0.65
1/31/2013	0.57	0.54	0.49	0.45	0.49	0.56	0.70	0.77	0.73	0.69	0.67	0.71	0.69	0.69	0.63	0.68	0.80	0.98	1.05	1.04	1.04	1.00	0.86	0.75
2/1/2013	0.67	0.63	0.63	0.63	0.66	0.76	0.90	0.94	0.92	0.86	0.86	0.91	0.87	0.89	0.81	0.85	0.93	1.20	1.22	1.24	1.18	1.09	1.03	0.91
2/2/2013	0.85	0.78	0.74	0.73	0.73	0.80	0.85	0.94	1.11	1.08	1.04	0.97	0.95	0.99	1.00	1.13	1.11	1.26	1.31	1.24	1.12	1.07	0.95	0.90
2/3/2013	0.79	0.70	0.68	0.67	0.66	0.72	0.76	0.87	1.03	1.14	1.15	1.06	1.09	1.08	1.10	1.07	1.20	1.26	1.27	1.33	1.16	1.07	0.95	0.84
2/4/2013	0.72	0.66	0.66	0.70	0.68	0.79	0.95	1.08	1.00	0.93	0.96	0.95	0.86	0.88	0.80	0.87	1.04	1.24	1.32	1.31	1.26	1.14	1.02	0.92
2/5/2013	0.77	0.73	0.70	0.66	0.69	0.81	0.96	1.04	1.04	1.07	0.95	0.98	0.97	0.90	0.89	0.95	1.03	1.25	1.26	1.23	1.22	1.09	0.94	0.82
2/6/2013	0.73	0.68	0.66	0.66	0.67	0.82	0.99	0.98	0.91	0.87	0.78	0.79	0.83	0.81	0.85	0.88	0.93	1.12	1.21	1.23	1.13	1.16	0.99	0.84
2/7/2013	0.76	0.71	0.68	0.69	0.71	0.86	0.96	1.03	0.97	0.94	0.92	0.91	0.85	0.89	0.85	0.88	1.00	1.11	1.31	1.29	1.19	1.05	0.98	0.85
2/8/2013	0.78	0.71	0.68	0.69	0.70	0.75	0.89	1.00	0.96	1.04	1.11	1.20	1.19	1.31	1.30	1.37	1.35	1.40	1.37	1.21	0.94	0.83	0.63	0.52
2/9/2013	0.46	0.43	0.42	0.41	0.40	0.42	0.45	0.47	0.54	0.63	0.69	0.63	0.65	0.67	0.65	0.74	0.70	0.85	1.00	0.98	0.94	0.88	0.81	0.69
2/10/2013	0.63	0.60	0.60	0.59	0.63	0.69	0.69	0.71	0.75	0.86	0.83	0.93	0.94	0.97	0.94	0.95	0.98	1.22	1.21	1.24	1.28	1.11	0.97	0.87
2/11/2013	0.77	0.71	0.72	0.74	0.72	0.79	0.87	0.99	0.95	1.01	0.98	1.12	1.05	1.04	1.05	1.06	1.10	1.19	1.28	1.27	1.17	1.02	0.90	0.75
2/12/2013	0.66	0.63	0.61	0.62	0.66	0.75	0.86	0.87	0.87	0.84	0.81	0.86	0.82	0.83	0.77	0.89	0.90	1.11	1.14	1.19	1.13	1.07	0.94	0.84
2/13/2013	0.70	0.65	0.64	0.65	0.67	0.76	0.98	1.01	0.92	0.83	0.79	0.74	0.70	0.67	0.68	0.75	0.83	1.03	1.11	1.11	1.11	1.06	0.94	0.83
2/14/2013	0.75	0.72	0.66	0.63	0.67	0.82	0.97	0.95	0.88	0.83	0.79	0.77	0.72	0.68	0.65	0.69	0.77	0.98	1.08	1.15	1.09	1.04	0.91	0.79
2/15/2013	0.71	0.66	0.62	0.64	0.64	0.74	0.90	0.92	0.85	0.74	0.74	0.77	0.70	0.62	0.64	0.72	0.87	0.98	1.07	1.09	1.07	0.98	0.88	0.75
2/16/2013	0.69	0.66	0.60	0.60	0.62	0.66	0.72	0.83	0.92	0.99	1.02	0.96	0.97	1.02	1.02	1.01	1.09	1.17	1.25	1.11	1.03	0.96	0.89	0.82
2/17/2013	0.77	0.72	0.68	0.69	0.72	0.76	0.86	0.95	1.05	1.16	1.24	1.28	1.20	1.19	1.16	1.14	1.20	1.31	1.39	1.31	1.31	1.25	1.11	0.99
2/18/2013	0.94	0.89	0.89	0.87	0.88	0.96	1.03	1.07	1.05	1.17	1.09	1.06	1.09	1.07	0.98	1.01	1.06	1.23	1.40	1.32	1.24	1.12	1.02	0.87
2/19/2013	0.78	0.75	0.73	0.74	0.74	0.85	0.96	1.02	0.93	0.83	0.84	0.85	0.84	0.75	0.73	0.80	0.94	1.20	1.19	1.13	1.05	1.00	0.89	0.78
2/20/2013	0.61	0.59	0.58	0.58	0.63	0.68	0.85	0.91	0.90	0.82	0.84	0.84	0.77	0.75	0.76	0.87	0.94	1.11	1.25	1.21	1.14	1.06	0.91	0.82
2/21/2013	0.76	0.72	0.71	0.71	0.76	0.82	0.96	0.96	0.98	1.00	0.99	0.96	0.91	0.88	0.87	0.84	0.93	1.12	1.26	1.30	1.08	1.04	1.00	0.83
2/22/2013	0.77	0.75	0.73	0.71	0.73	0.79	0.92	1.00	0.97	0.96	0.90	0.91	0.85	0.79	0.79	0.83	0.85	1.01	1.10	1.09	1.03	0.95	0.90	0.80
2/23/2013	0.68	0.64	0.61	0.61	0.62	0.68	0.74	0.85	0.96	1.09	1.00	1.01	1.02	1.01	0.94	1.00	1.09	1.11	1.21	1.14	1.09	0.99	0.90	0.81
2/24/2013	0.74	0.63	0.62	0.62	0.59	0.66	0.71	0.82	0.92	0.97	1.13	1.13	1.23	1.12	1.07	1.04	1.09	1.17	1.19	1.21	1.10	0.96	0.83	0.73
2/25/2013	0.73	0.62	0.63	0.63	0.64	0.79	0.90	0.89	0.86	0.81	0.82	0.78	0.77	0.71	0.78	0.84	0.98	1.19	1.22	1.16	1.13	1.03	0.87	0.76
2/26/2013	0.66	0.62	0.63	0.60	0.65	0.74	0.86	0.94	0.89	0.77	0.80	0.78	0.78	0.76	0.73	0.72	0.80	0.99	1.07	1.16	1.06	0.97	0.86	0.73
2/27/2013	0.70	0.66	0.63	0.65	0.66	0.75	0.90	0.91	0.86	0.87	0.88	0.90	0.85	0.87	0.90	0.98	1.05	1.21	1.17	1.16	1.07	1.01	0.92	0.71
2/28/2013	0.64	0.62	0.59	0.60	0.60	0.73	0.86	0.91	0.86	0.81	0.77	0.76	0.73	0.70	0.69	0.71	0.82	1.00	1.11	1.12	0.98	0.96	0.86	0.71
3/1/2013	0.62	0.59	0.56	0.59	0.64	0.70	0.85	0.86	0.81	0.70	0.70	0.67	0.61	0.62	0.61	0.64	0.79	0.99	1.09	0.99	1.05	0.95	0.87	0.71
3/2/2013	0.63	0.59	0.56	0.55	0.58	0.61	0.68	0.80	0.88	0.94	0.85	0.91	0.92	0.88	0.85	0.91	0.91	1.07	1.06	1.04	1.00	0.95	0.89	0.80
3/3/2013	0.68	0.64	0.61	0.59	0.63	0.63	0.72	0.86	0.98	0.96	0.91	0.86	0.86	0.89	0.91	0.85	0.95	1.01	1.13	1.07	0.98	0.97	0.79	0.70
3/4/2013	0.65	0.61	0.58	0.60	0.62	0.73	0.91	0.92	0.78	0.79	0.76	0.83	0.75	0.74	0.77	0.80	0.81	1.00	1.08	1.10	1.09	0.97	0.84	0.73
3/5/2013	0.68	0.62	0.60	0.59	0.66	0.72	0.85	0.88	0.86	0.82	0.79	0.74	0.71	0.64	0.66	0.70	0.82	1.03	1.01	1.05	1.04	0.92	0.79	0.64
3/6/2013	0.61	0.56	0.55	0.55	0.58	0.68	0.84	0.88	0.89	0.89	0.85	0.84	0.77	0.78	0.72	0.82	0.94	1.08	1.15	1.12	1.02	0.99	0.86	0.75
3/7/2013	0.67	0.63	0.62	0.61	0.68	0.74	0.90	0.87	0.88	0.84	0.86	0.84	0.82	0.79	0.83	0.84	1.01	1.13	1.25	1.19	1.08	1.04	0.88	0.78
3/8/2013	0.70	0.67	0.66	0.63	0.65	0.78	0.93	0.91	0.89	0.86	0.90	0.93	0.88	0.95	0.89	0.95	1.00	1.13	1.14	1.09	1.05	0.99	0.87	0.81
3/9/2013	0.68	0.64	0.62	0.61	0.63	0.67	0.76	0.84	0.89	0.87	0.91	0.86	0.87	0.86	0.82	0.75	0.78	0.88	0.97	1.02	0.96	0.96	0.87	0.77
3/10/2013	0.69	0.61	0.00	0.61	0.60	0.63	0.65	0.76	0.87	0.94	0.92	0.85	0.94	0.92	0.96	0.93	0.85	0.83	1.01	1.10	1.03	0.97	0.85	0.71
3/11/2013	0.63	0.60	0.56	0.56	0.57	0.62	0.76	0.84	0.80	0.80	0.75	0.78	0.78	0.68	0.68	0.67	0.82	0.90	0.99	1.00	0.99	0.90	0.84	0.66
3/12/2013	0.56	0.56	0.51	0.51	0.56	0.64	0.74	0.79	0.75	0.68	0.72	0.69	0.76	0.71	0.73	0.79	0.86	0.96	1.14	1.05	0.94	0.85	0.72	0.61

3/13/2013	0.54	0.52	0.50	0.50	0.52	0.60	0.85	0.84	0.72	0.70	0.65	0.60	0.61	0.57	0.64	0.64	0.71	0.79	0.86	0.97	0.93	0.87	0.79	0.67
3/14/2013	0.56	0.57	0.55	0.57	0.56	0.70	0.80	0.83	0.79	0.79	0.73	0.73	0.72	0.71	0.74	0.78	0.90	1.02	1.10	1.21	1.13	1.21	1.04	0.78
3/15/2013	0.72	0.70	0.65	0.66	0.70	0.82	0.91	0.97	0.92	0.90	0.80	0.76	0.77	0.75	0.69	0.70	0.77	0.84	0.90	0.98	0.96	0.95	0.95	0.77
3/16/2013	0.67	0.61	0.61	0.59	0.60	0.65	0.74	0.82	0.88	0.95	0.91	0.94	0.97	0.86	0.79	0.77	0.79	0.93	0.92	1.03	0.94	0.88	0.84	0.73
3/17/2013	0.63	0.61	0.57	0.58	0.59	0.62	0.69	0.82	0.90	1.02	0.96	0.95	1.00	0.94	0.86	0.92	0.96	0.96	1.02	1.09	1.03	1.03	0.89	0.81
3/18/2013	0.68	0.66	0.65	0.66	0.69	0.78	0.92	1.01	0.95	0.93	0.87	0.88	0.86	0.77	0.75	0.81	0.94	1.07	1.19	1.11	1.06	1.02	0.86	0.78
3/19/2013	0.68	0.65	0.64	0.64	0.66	0.76	0.86	0.96	0.92	0.88	0.89	0.90	0.89	0.91	0.87	0.91	0.93	1.01	1.11	1.15	1.10	1.04	0.91	0.79
3/20/2013	0.69	0.65	0.62	0.63	0.66	0.73	0.90	0.95	0.88	0.80	0.80	0.76	0.70	0.74	0.72	0.73	0.83	0.92	0.92	1.02	1.01	1.02	0.85	0.74
3/21/2013	0.65	0.64	0.59	0.61	0.63	0.74	0.89	0.91	0.83	0.79	0.79	0.75	0.77	0.71	0.73	0.73	0.81	0.97	1.09	1.03	1.04	0.97	0.87	0.78
3/22/2013	0.68	0.65	0.64	0.62	0.67	0.73	0.87	0.91	0.79	0.75	0.80	0.77	0.72	0.62	0.65	0.67	0.74	0.81	0.85	0.98	0.99	0.95	0.87	0.76
3/23/2013	0.66	0.62	0.60	0.59	0.61	0.67	0.72	0.84	0.98	0.99	0.89	0.90	0.95	0.97	0.89	0.80	0.86	0.89	1.04	1.04	0.99	0.89	0.80	0.75
3/24/2013	0.66	0.63	0.59	0.60	0.62	0.64	0.72	0.82	0.87	0.93	0.84	0.89	0.87	0.84	0.84	0.85	0.75	0.84	0.87	0.96	0.95	0.92	0.77	0.68
3/25/2013	0.62	0.57	0.53	0.55	0.58	0.65	0.84	0.84	0.81	0.80	0.75	0.80	0.79	0.73	0.71	0.76	0.85	1.05	1.00	1.10	1.06	0.97	0.85	0.73
3/26/2013	0.60	0.59	0.56	0.57	0.61	0.70	0.81	0.83	0.78	0.77	0.72	0.71	0.69	0.64	0.66	0.72	0.78	0.92	0.92	1.01	1.01	0.97	0.80	0.66
3/27/2013	0.58	0.58	0.55	0.56	0.58	0.67	0.82	0.86	0.78	0.78	0.71	0.68	0.60	0.65	0.59	0.64	0.75	0.84	0.88	0.94	0.92	0.92	0.76	0.67
3/28/2013	0.57	0.53	0.51	0.52	0.57	0.65	0.78	0.79	0.70	0.71	0.66	0.70	0.70	0.60	0.59	0.69	0.83	0.94	0.93	0.98	0.93	0.89	0.77	0.69
3/29/2013	0.62	0.57	0.55	0.55	0.55	0.62	0.74	0.82	0.78	0.76	0.73	0.70	0.68	0.70	0.67	0.66	0.70	0.76	0.78	0.78	0.84	0.83	0.70	0.60
3/30/2013	0.57	0.53	0.47	0.50	0.51	0.53	0.57	0.69	0.77	0.80	0.82	0.76	0.74	0.76	0.78	0.68	0.72	0.75	0.79	0.82	0.82	0.77	0.77	0.67
3/31/2013	0.59	0.53	0.49	0.50	0.52	0.55	0.65	0.74	0.86	0.90	0.93	0.86	0.86	0.76	0.74	0.70	0.68	0.74	0.82	0.89	0.95	0.85	0.70	0.61
4/1/2013	0.54	0.49	0.48	0.46	0.51	0.59	0.73	0.75	0.69	0.70	0.70	0.65	0.58	0.60	0.57	0.58	0.76	0.86	0.95	0.96	0.90	0.86	0.76	0.66
4/2/2013	0.58	0.53	0.55	0.53	0.58	0.67	0.84	0.82	0.79	0.70	0.72	0.75	0.72	0.71	0.72	0.81	0.86	0.94	0.91	1.08	1.05	0.97	0.85	0.71
4/3/2013	0.65	0.59	0.60	0.59	0.60	0.68	0.84	0.88	0.82	0.74	0.74	0.74	0.69	0.63	0.67	0.68	0.76	0.81	0.92	1.01	1.01	0.93	0.81	0.70
4/4/2013	0.65	0.60	0.59	0.59	0.62	0.71	0.84	0.84	0.77	0.75	0.68	0.65	0.66	0.61	0.63	0.59	0.70	0.79	0.88	0.95	0.99	0.95	0.82	0.68
4/5/2013	0.59	0.57	0.55	0.53	0.56	0.65	0.81	0.81	0.75	0.68	0.70	0.70	0.69	0.61	0.62	0.61	0.62	0.74	0.77	0.88	0.83	0.77	0.70	0.62
4/6/2013	0.55	0.51	0.50	0.52	0.54	0.56	0.66	0.76	0.87	0.89	0.90	0.97	0.94	0.85	0.81	0.69	0.77	0.78	0.89	1.05	0.91	0.84	0.78	0.67
4/7/2013	0.62	0.59	0.57	0.61	0.63	0.63	0.67	0.78	0.86	0.93	0.98	0.93	0.90	0.85	0.78	0.86	0.88	0.82	0.99	1.09	0.99	0.90	0.73	0.61
4/8/2013	0.55	0.50	0.47	0.46	0.51	0.58	0.76	0.79	0.67	0.66	0.62	0.60	0.61	0.55	0.57	0.63	0.67	0.66	0.75	0.86	0.90	0.82	0.67	0.51
4/9/2013	0.47	0.42	0.42	0.45	0.45	0.57	0.68	0.74	0.63	0.62	0.62	0.66	0.56	0.53	0.52	0.52	0.62	0.69	0.75	0.85	0.87	0.78	0.66	0.54
4/10/2013	0.46	0.42	0.40	0.41	0.44	0.50	0.68	0.66	0.64	0.59	0.55	0.55	0.59	0.52	0.54	0.58	0.65	0.73	0.77	0.83	0.86	0.76	0.66	0.55
4/11/2013	0.46	0.43	0.43	0.45	0.46	0.53	0.68	0.68	0.61	0.64	0.61	0.61	0.59	0.60	0.64	0.62	0.64	0.73	0.81	0.88	0.86	0.79	0.70	0.59
4/12/2013	0.52	0.48	0.47	0.49	0.51	0.59	0.72	0.72	0.75	0.73	0.70	0.78	0.78	0.73	0.79	0.88	0.93	1.00	1.04	0.97	0.95	0.93	0.85	0.72
4/13/2013	0.63	0.60	0.55	0.56	0.58	0.60	0.69	0.78	0.93	0.93	0.92	0.87	0.78	0.81	0.78	0.69	0.78	0.71	0.74	0.83	0.90	0.73	0.71	0.63
4/14/2013	0.58	0.52	0.50	0.48	0.50	0.53	0.59	0.70	0.78	0.81	0.79	0.74	0.80	0.79	0.71	0.74	0.77	0.80	0.84	0.86	0.88	0.83	0.72	0.62
4/15/2013	0.54	0.51	0.49	0.50	0.54	0.64	0.78	0.75	0.73	0.69	0.67	0.71	0.69	0.61	0.63	0.59	0.63	0.76	0.84	0.84	0.83	0.82	0.67	0.58
4/16/2013	0.50	0.47	0.45	0.45	0.50	0.57	0.72	0.78	0.76	0.70	0.66	0.67	0.65	0.58	0.57	0.57	0.65	0.79	0.87	0.93	0.89	0.82	0.63	0.53
4/17/2013	0.48	0.44	0.42	0.42	0.45	0.52	0.62	0.73	0.67	0.64	0.57	0.62	0.59	0.54	0.51	0.51	0.57	0.68	0.71	0.77	0.79	0.77	0.70	0.56
4/18/2013	0.48	0.42	0.42	0.41	0.44	0.54	0.63	0.69	0.65	0.66	0.68	0.61	0.59	0.53	0.58	0.60	0.63	0.74	0.86	0.88	0.83	0.76	0.68	0.53
4/19/2013	0.44	0.42	0.39	0.42	0.43	0.51	0.65	0.62	0.64	0.65	0.63	0.66	0.65	0.59	0.58	0.64	0.71	0.79	0.87	0.87	0.84	0.76	0.67	0.57
4/20/2013	0.50	0.45	0.45	0.42	0.42	0.46	0.49	0.62	0.73	0.81	0.83	0.86	0.77	0.80	0.70	0.71	0.77	0.79	0.87	0.82	0.89	0.89	0.72	0.62
4/21/2013	0.56	0.52	0.48	0.47	0.48	0.51	0.55	0.70	0.78	0.82	0.85	0.84	0.86	0.79	0.72	0.70	0.84	0.84	0.84	0.96	0.86	0.81	0.68	0.56
4/22/2013	0.52	0.51	0.45	0.47	0.50	0.59	0.71	0.73	0.70	0.64	0.64	0.64	0.65	0.59	0.57	0.61	0.64	0.79	0.93	1.00	0.96	0.84	0.76	0.63
4/23/2013	0.54	0.49	0.48	0.49	0.52	0.61	0.72	0.80	0.81	0.75	0.75	0.74	0.73	0.68	0.67	0.76	0.89	1.02	0.98	1.03	0.96	0.87	0.81	0.65
4/24/2013	0.59	0.52	0.52	0.52	0.55	0.67	0.78	0.77	0.74	0.62	0.64	0.61	0.52	0.53	0.53	0.58	0.64	0.69	0.82	0.91	0.89	0.80	0.67	0.54
4/25/2013	0.47	0.43	0.43	0.42	0.45	0.55	0.63	0.74	0.63	0.59	0.54	0.55	0.55	0.53	0.52	0.49	0.56	0.66	0.68	0.80	0.83	0.79	0.64	0.55
4/26/2013	0.52	0.41	0.40	0.42	0.45	0.53	0.65	0.71	0.65	0.58	0.62	0.62	0.54	0.53	0.53	0.57	0.59	0.64	0.66	0.75	0.89	0.77	0.69	0.58
4/27/2013	0.54	0.45	0.42	0.44	0.44	0.47	0.55	0.64	0.70	0.65	0.73	0.67	0.67	0.64	0.61	0.66	0.63	0.71	0.68	0.76	0.82	0.73	0.73	0.59
4/28/2013	0.51	0.48	0.45	0.43	0.44	0.48	0.55	0.67	0.70	0.71	0.77	0.72	0.71	0.68	0.64	0.66	0.71	0.76	0.81	0.85	0.87	0.84	0.63	0.47
4/29/2013	0.42	0.40	0.40	0.42	0.44	0.52	0.61	0.60	0.59	0.56	0.57	0.59	0.60	0.57	0.59	0.60	0.71	0.75	0.72	0.81	0.85	0.77	0.63	0.52
4/30/2013	0.43	0.40	0.39	0.38	0.42	0.51	0.62	0.63	0.58	0.61	0.54	0.60	0.57	0.50	0.48	0.53	0.56	0.67	0.67	0.74	0.77	0.70	0.56	0.48
5/1/2013	0.46	0.41	0.40	0.43	0.45	0.53	0.65	0.69	0.66	0.56	0.58	0.59	0.53	0.49	0.46	0.55	0.60	0.65	0.78	0.78	0.81	0.76	0.65	0.56
5/2/2013	0.48	0.41	0.40	0.42	0.46	0.51	0.64	0.63	0.60	0.50	0.48	0.52	0.54	0.51	0.48	0.51	0.57	0.71	0.79	0.82	0.94	0.84	0.70	0.58
5/3/2013	0.46	0.45	0.41	0.44	0.44	0.49	0.63	0.68	0.61	0.56	0.57	0.56	0.51	0.55	0.54	0.52	0.58	0.61	0.66	0.71	0.73	0.71	0.66	0.54
5/4/2013	0.48	0.44	0.43	0.44	0.46	0.47	0.52	0.61	0.70	0.79	0.73	0.66	0.75	0.67	0.66	0.63	0.62	0.69	0.73	0.75	0.79	0.77	0.66	0.54
5/5/2013	0.48	0.45	0.41	0.43	0.45	0.50	0.52	0.58	0.71	0.78	0.68	0.71	0.64	0.65	0.62	0.66	0.72	0.70	0.81	0.83	0.93	0.83	0.65	0.54
5/6/2013	0.45	0.41	0.40	0.39	0.43	0.53	0.63	0.65	0.59	0.58	0.61	0.66	0.64	0.62	0.64	0.62	0.66	0.75	0.75	0.79	0.92	0.77	0.67	0.58
5/7/2013	0.48	0.41	0.39	0.40	0.41	0.52	0.62	0.67	0.60	0.64	0.56	0.58	0.57	0.59	0.57	0.57	0.62	0.70	0.77	0.84	0.92	0.83	0.67	0.58
5/8/2013	0.47	0.41	0.38	0.38	0.39	0.44	0.61	0.65	0.62	0.57	0.59	0.61	0.59	0.51	0.56	0.66	0.73	0.80	0.84	0.89	0.82	0.83	0.73	0.54
5/9/2013	0.45	0.44	0.42	0.42	0.42	0.50	0.62	0.62	0.61	0.58	0.57	0.61	0.56	0.53	0.53	0.59	0.68	0.73	0.80	0.82	0.83	0.83	0.67	0.52
5/10/2013	0.41	0.42	0.39	0.39	0.40	0.46	0.63	0.61	0.60	0.58	0.60	0.56	0.58	0.56	0.63	0.69	0.70	0.72	0.76	0.73	0.79	0.78	0.65	0.61
5/11/2013	0.49	0.44	0.40	0.40	0.38	0.41	0.46	0.56	0.69	0.71	0.68	0.69	0.75	0.75	0.75	0.76	0.79	0.79	0.82	0.81	0.84	0.77	0.71	0.64
5/12/2013	0.49	0.43	0.43	0.40	0.40	0.41	0.48	0.56	0.73	0.76	0.74	0.69	0.72	0.66	0.71	0.71	0.70	0.70	0.70	0.72	0.85	0.84	0.68	0.59
5/13/2013	0.48	0.41	0.40	0.39	0.40	0.48	0.63	0.67	0.56	0.60	0.60	0.54	0.59	0.54	0.56	0.63	0.64	0.75	0.85	0.91	0.89	0.82	0.68	0.60
5/14/2013	0.52	0.48	0.44	0.44	0.47	0.58	0.70	0.71	0.65	0.63	0.64	0.65	0.67	0.64	0.62	0.57	0.67	0.77	0.80	0.83	0.90	0.86	0.75	0.57
5/15/2013	0.50	0.48	0.45	0.46	0.46	0.57	0.70	0.72	0.63	0.60	0.57	0.54	0.59	0.58	0.54	0.57	0.67	0.85	0.91	0.95	0.88	0.82	0.71	0.58
5/16/2013	0.47	0.45	0.44	0.44	0.46	0.56	0.65	0.70	0.66	0.61	0.55	0.55	0.57	0.55	0.54	0.58	0.64	0.71	0.72	0.81	0.91	0.82	0.66	0.53
5/17/2013	0.45	0.42	0.41	0.39	0.40	0.45	0.65	0.69	0.60	0.58	0.56	0.60	0.57	0.52	0.53	0.58	0.62	0.66	0.66	0.72	0.77	0.81	0.70	0.56
5/18/2013	0.47	0.45	0.40	0.39	0.41	0.44	0.51	0.61	0.70	0.60	0.68	0.67	0.65	0.64	0.66	0.71	0.70	0.65	0.72	0.73	0.76	0.71	0.68	0.57
5/19/2013	0.48	0.42	0.40	0.38	0.38	0.43	0.46	0.57	0.66	0.73	0.70	0.76	0.75	0.75	0.68	0.66	0.78	0.93	0.95	0.89	0.95	0.87	0.70	0.59
5/20/2013	0.47	0.42	0.40	0.40	0.42	0.51	0.63	0.67	0.64	0.60	0.64	0.63	0.59	0.58	0.54	0.64	0.72	0.85	0.88	0.96	0.96	0.95	0.71	0.59
5/21/2013	0.50	0.50	0.45	0.43	0.44	0.51	0.62	0.73	0.65	0.61	0.71	0.73	0.76	0.73	0.81	0.90	0.91	0.99	1.05	1.03	0.92	0.87	0.77	0.57
5/22/2013	0.53	0.46	0.43	0.42	0.45	0.51	0.64	0.67	0.64	0.61	0.59	0.59	0.55	0.60	0.58	0.66	0.71	0.87	0.89	0.89	0.90	0.86	0.76	0.64
5/23/2013	0.52	0.46	0.43	0.42	0.44	0.50	0.64	0.69	0.67	0.63	0.59	0.59	0.61	0.62	0.64	0.67	0.77	0.84	0.89	0.96	0.89	0.84	0.74	0.60
5/24/2013	0.48	0.46	0.44	0.42	0.43	0.50	0.66	0.68	0.72	0.64	0.67	0.68	0.72	0.61	0.66	0.74	0.83	0.93	0.89	0.87	0.83	0.76	0.72	0.62
5/25/2013	0.53	0.49	0.46	0.43	0.42	0.45	0.50	0.61	0.72	0.82	0.80	0.90	0.87	0.82	0.78	0.78	0.82	0.95	0.94	0.98	0.91	0.86	0.77	0.65

5/26/2013	0.54	0.51	0.47	0.46	0.46	0.50	0.61	0.67	0.79	0.83	0.83	0.82	0.76	0.75	0.75	0.68	0.73	0.79	0.88	0.86	0.88	0.86	0.79	0.62
5/27/2013	0.51	0.47	0.44	0.44	0.45	0.51	0.51	0.64	0.77	0.72	0.83	0.75	0.70	0.73	0.74	0.71	0.77	0.87	0.92	0.89	0.92	0.92	0.71	0.55
5/28/2013	0.46	0.46	0.42	0.42	0.43	0.50	0.63	0.69	0.66	0.63	0.60	0.61	0.66	0.60	0.58	0.68	0.73	0.78	0.81	0.86	0.80	0.82	0.75	0.60
5/29/2013	0.48	0.45	0.43	0.42	0.42	0.48	0.63	0.72	0.70	0.66	0.67	0.61	0.61	0.55	0.61	0.66	0.73	0.86	0.88	1.00	0.91	0.92	0.78	0.60
5/30/2013	0.53	0.50	0.46	0.45	0.45	0.52	0.66	0.67	0.70	0.73	0.73	0.75	0.84	0.86	0.94	1.00	1.08	1.19	1.25	1.25	1.28	1.23	1.09	0.93
5/31/2013	0.78	0.68	0.62	0.58	0.57	0.60	0.74	0.78	0.89	0.85	0.90	1.02	1.10	1.11	1.17	1.23	1.35	1.39	1.44	1.43	1.38	1.35	1.17	1.00
6/1/2013	0.84	0.73	0.66	0.60	0.58	0.60	0.65	0.80	0.92	1.04	1.19	1.30	1.35	1.38	1.42	1.45	1.46	1.45	1.41	1.41	1.32	1.22	1.16	0.95
6/2/2013	0.79	0.71	0.66	0.64	0.62	0.59	0.63	0.73	0.92	1.02	1.07	1.29	1.29	1.35	1.33	1.37	1.30	1.36	1.29	1.26	1.30	1.15	0.97	0.79
6/3/2013	0.70	0.63	0.56	0.55	0.54	0.60	0.71	0.77	0.77	0.78	0.82	0.72	0.78	0.77	0.78	0.80	0.85	0.99	1.00	1.04	1.00	0.98	0.90	0.71
6/4/2013	0.64	0.54	0.49	0.45	0.46	0.53	0.64	0.70	0.70	0.65	0.61	0.68	0.65	0.71	0.71	0.70	0.84	0.90	0.91	1.06	0.99	0.95	0.82	0.66
6/5/2013	0.53	0.50	0.47	0.44	0.43	0.48	0.63	0.64	0.65	0.64	0.67	0.61	0.63	0.68	0.69	0.71	0.71	0.81	0.87	0.91	0.90	0.85	0.77	0.67
6/6/2013	0.55	0.46	0.43	0.42	0.43	0.54	0.61	0.66	0.66	0.62	0.65	0.67	0.63	0.65	0.66	0.70	0.71	0.81	0.93	0.92	0.88	0.85	0.77	0.61
6/7/2013	0.52	0.49	0.48	0.43	0.43	0.48	0.63	0.76	0.70	0.67	0.68	0.65	0.66	0.71	0.70	0.76	0.74	0.85	0.87	0.93	0.99	0.85	0.74	0.67
6/8/2013	0.54	0.48	0.46	0.45	0.45	0.47	0.55	0.59	0.72	0.82	0.83	0.89	0.86	0.84	0.84	0.87	0.93	0.94	0.89	0.89	1.01	0.95	0.90	0.79
6/9/2013	0.65	0.59	0.52	0.48	0.45	0.47	0.52	0.68	0.82	0.88	0.91	0.89	0.91	0.97	0.99	0.98	0.97	1.00	1.05	1.07	1.08	1.10	0.93	0.77
6/10/2013	0.65	0.58	0.52	0.49	0.49	0.56	0.71	0.76	0.76	0.75	0.73	0.72	0.74	0.72	0.72	0.71	0.78	0.93	0.99	0.98	0.99	0.91	0.87	0.63
6/11/2013	0.56	0.50	0.46	0.45	0.48	0.53	0.65	0.75	0.75	0.69	0.70	0.71	0.68	0.69	0.66	0.78	0.81	0.97	1.04	1.00	0.97	0.90	0.80	0.64
6/12/2013	0.57	0.51	0.48	0.47	0.48	0.51	0.65	0.70	0.67	0.70	0.75	0.68	0.66	0.62	0.68	0.72	0.75	0.84	0.85	0.87	0.91	0.89	0.78	0.63
6/13/2013	0.53	0.50	0.45	0.45	0.47	0.53	0.64	0.72	0.66	0.65	0.63	0.67	0.67	0.66	0.69	0.70	0.82	0.82	0.87	0.93	0.93	0.90	0.74	0.61
6/14/2013	0.52	0.46	0.44	0.42	0.45	0.48	0.65	0.70	0.72	0.68	0.63	0.67	0.65	0.65	0.68	0.70	0.69	0.82	0.75	0.78	0.84	0.79	0.73	0.67
6/15/2013	0.57	0.48	0.47	0.44	0.43	0.44	0.51	0.61	0.73	0.76	0.80	0.83	0.81	0.88	0.80	0.86	0.91	0.95	0.91	0.91	0.92	0.94	0.83	0.71
6/16/2013	0.61	0.53	0.49	0.45	0.43	0.47	0.54	0.64	0.83	0.81	0.84	0.85	0.85	0.86	0.85	0.85	0.81	0.89	0.94	0.94	0.94	0.95	0.82	0.67
6/17/2013	0.59	0.53	0.51	0.46	0.47	0.52	0.70	0.74	0.71	0.72	0.77	0.83	0.92	0.91	0.97	1.08	1.14	1.23	1.23	1.32	1.22	1.14	0.96	0.76
6/18/2013	0.65	0.59	0.51	0.50	0.51	0.55	0.71	0.69	0.68	0.68	0.79	0.78	0.84	0.92	0.89	0.90	0.95	1.05	1.00	1.03	1.03	1.01	0.79	0.62
6/19/2013	0.51	0.52	0.48	0.47	0.46	0.53	0.64	0.67	0.68	0.65	0.71	0.67	0.65	0.70	0.73	0.75	0.86	0.93	0.88	0.99	0.97	0.96	0.81	0.64
6/20/2013	0.56	0.51	0.48	0.46	0.48	0.55	0.67	0.75	0.67	0.65	0.66	0.68	0.75	0.80	0.87	0.86	0.94	0.94	0.99	1.07	1.01	1.02	0.89	0.71
6/21/2013	0.61	0.56	0.51	0.48	0.50	0.53	0.66	0.73	0.69	0.70	0.69	0.73	0.77	0.89	0.93	0.96	1.02	1.11	1.08	1.07	1.05	1.06	0.94	0.77
6/22/2013	0.67	0.60	0.55	0.53	0.51	0.56	0.60	0.67	0.83	0.92	1.00	1.01	1.06	1.04	1.07	1.15	1.14	1.08	1.00	1.00	0.96	0.89	0.90	0.81
6/23/2013	0.70	0.62	0.57	0.55	0.53	0.52	0.58	0.63	0.84	0.92	1.03	1.12	1.22	1.21	1.23	1.32	1.32	1.44	1.40	1.38	1.38	1.29	1.17	1.00
6/24/2013	0.83	0.78	0.70	0.69	0.67	0.71	0.84	0.92	0.93	1.06	1.16	1.28	1.34	1.46	1.50	1.54	1.67	1.78	1.80	1.72	1.67	1.61	1.33	1.10
6/25/2013	0.96	0.83	0.76	0.72	0.70	0.74	0.82	0.88	0.93	1.04	1.09	1.20	1.31	1.36	1.48	1.53	1.56	1.70	1.65	1.67	1.74	1.58	1.37	1.10
6/26/2013	0.92	0.84	0.82	0.76	0.73	0.76	0.86	0.91	0.97	1.05	1.18	1.30	1.38	1.42	1.38	1.36	1.43	1.50	1.49	1.48	1.52	1.52	1.40	1.17
6/27/2013	1.00	0.86	0.79	0.75	0.75	0.76	0.87	0.97	0.94	0.95	0.95	0.90	0.89	0.86	0.88	0.89	1.02	1.12	1.23	1.21	1.14	1.17	1.01	0.84
6/28/2013	0.71	0.65	0.61	0.59	0.61	0.66	0.75	0.80	0.93	1.00	0.96	1.04	1.07	1.02	1.03	1.05	1.20	1.27	1.24	1.28	1.23	1.23	1.10	0.90
6/29/2013	0.80	0.71	0.69	0.66	0.65	0.65	0.71	0.83	0.93	1.08	1.15	1.27	1.25	1.42	1.40	1.38	1.30	1.30	1.28	1.24	1.19	1.22	1.15	1.00
6/30/2013	0.87	0.83	0.75	0.70	0.71	0.68	0.75	0.85	1.00	1.04	1.14	1.22	1.29	1.32	1.26	1.23	1.30	1.31	1.38	1.39	1.47	1.33	1.16	0.99
7/1/2013	0.81	0.77	0.71	0.68	0.65	0.74	0.85	0.92	0.94	0.90	0.96	0.95	1.07	1.12	1.15	1.21	1.23	1.32	1.30	1.37	1.33	1.34	1.17	0.99
7/2/2013	0.85	0.78	0.73	0.69	0.69	0.72	0.83	0.93	0.98	0.97	1.00	1.07	1.05	1.08	1.14	1.15	1.27	1.39	1.49	1.43	1.38	1.38	1.30	1.02
7/3/2013	0.86	0.81	0.75	0.73	0.69	0.70	0.83	0.95	1.00	1.02	1.13	1.15	1.34	1.31	1.47	1.53	1.58	1.66	1.66	1.60	1.47	1.47	1.36	1.20
7/4/2013	1.00	0.89	0.87	0.81	0.77	0.76	0.85	0.99	1.11	1.32	1.46	1.66	1.64	1.72	1.72	1.68	1.71	1.73	1.67	1.72	1.70	1.61	1.55	1.30
7/5/2013	1.11	0.99	0.90	0.87	0.87	0.86	0.95	1.09	1.24	1.38	1.48	1.63	1.75	1.78	1.76	1.79	1.94	2.00	1.92	1.78	1.74	1.65	1.62	1.44
7/6/2013	1.22	1.05	0.98	0.91	0.90	0.91	0.99	1.13	1.30	1.53	1.67	1.75	1.95	1.94	1.91	1.97	1.98	1.94	1.89	1.83	1.78	1.73	1.61	1.42
7/7/2013	1.25	1.10	1.03	0.96	0.91	0.92	0.95	1.09	1.28	1.51	1.64	1.78	1.85	1.97	1.96	1.93	1.95	1.91	1.88	1.87	1.93	1.84	1.57	1.34
7/8/2013	1.12	1.01	0.97	0.92	0.89	0.93	1.01	1.13	1.16	1.33	1.42	1.53	1.68	1.72	1.73	1.73	1.90	1.90	1.89	1.90	1.84	1.74	1.57	1.27
7/9/2013	1.06	1.00	0.92	0.87	0.85	0.88	0.95	0.98	0.96	0.93	1.02	1.01	1.07	1.14	1.27	1.18	1.25	1.32	1.34	1.39	1.42	1.34	1.22	1.04
7/10/2013	0.89	0.85	0.79	0.76	0.74	0.79	0.85	0.93	0.96	1.03	1.09	1.15	1.30	1.37	1.45	1.47	1.46	1.53	1.55	1.53	1.52	1.53	1.37	1.20
7/11/2013	1.02	0.94	0.86	0.83	0.82	0.86	0.86	0.98	1.03	1.03	1.00	1.03	1.09	1.19	1.27	1.28	1.31	1.41	1.39	1.50	1.50	1.55	1.36	1.10
7/12/2013	0.95	0.83	0.78	0.76	0.75	0.79	0.84	0.92	0.94	0.95	1.06	1.08	1.10	1.16	1.14	1.08	1.14	1.27	1.37	1.27	1.26	1.18	1.09	0.91
7/13/2013	0.78	0.72	0.68	0.65	0.64	0.64	0.69	0.73	0.86	0.94	0.98	1.04	1.16	1.15	1.16	1.14	1.10	1.16	1.29	1.31	1.24	1.28	1.18	1.06
7/14/2013	0.91	0.83	0.79	0.77	0.77	0.77	0.79	0.90	1.09	1.26	1.44	1.55	1.65	1.65	1.81	1.88	1.87	1.97	1.92	1.93	1.94	1.95	1.80	1.45
7/15/2013	1.25	1.15	1.03	0.99	0.95	0.95	1.02	1.13	1.32	1.40	1.46	1.63	1.74	1.74	1.87	1.87	1.98	2.07	2.06	1.99	2.01	1.93	1.70	1.50
7/16/2013	1.26	1.12	1.05	1.00	0.94	0.93	1.04	1.12	1.14	1.25	1.35	1.50	1.63	1.73	1.79	1.83	1.93	2.04	1.95	1.97	1.93	1.89	1.70	1.46
7/17/2013	1.20	1.10	1.03	1.03	0.97	0.96	1.01	1.15	1.23	1.39	1.47	1.57	1.66	1.70	1.76	1.77	1.90	1.91	1.89	1.77	1.77	1.78	1.62	1.35
7/18/2013	1.18	1.08	1.02	0.96	0.95	1.01	1.06	1.14	1.33	1.36	1.49	1.61	1.73	1.79	1.89	2.04	2.00	2.02	2.02	1.99	2.05	2.11	1.82	1.62
7/19/2013	1.35	1.21	1.11	1.06	1.05	1.02	1.14	1.25	1.36	1.42	1.60	1.80	1.84	1.90	1.95	1.99	2.04	2.12	2.08	1.96	1.92	1.91	1.80	1.60
7/20/2013	1.41	1.27	1.17	1.15	1.09	1.08	1.10	1.31	1.47	1.54	1.72	1.90	1.90	1.98	1.99	1.96	1.88	1.83	1.80	1.77	1.67	1.74	1.61	1.38
7/21/2013	1.13	1.03	0.96	0.91	0.86	0.83	0.88	0.95	1.05	1.08	1.23	1.23	1.27	1.30	1.37	1.37	1.45	1.54	1.71	1.60	1.57	1.56	1.35	1.14
7/22/2013	0.95	0.85	0.82	0.78	0.78	0.79	0.86	0.95	0.97	1.03	1.14	1.26	1.36	1.48	1.48	1.46	1.47	1.62	1.58	1.57	1.62	1.53	1.43	1.17
7/23/2013	0.97	0.90	0.87	0.84	0.82	0.86	0.96	1.03	1.03	1.01	1.08	1.15	1.29	1.36	1.42	1.46	1.59	1.72	1.62	1.59	1.50	1.50	1.43	1.15
7/24/2013	1.00	0.91	0.87	0.85	0.84	0.85	0.99	1.00	1.13	1.18	1.30	1.36	1.40	1.42	1.43	1.48	1.48	1.63	1.63	1.60	1.60	1.50	1.32	1.10
7/25/2013	0.92	0.84	0.79	0.74	0.72	0.71	0.78	0.76	0.81	0.80	0.78	0.85	0.85	0.79	0.74	0.72	0.81	0.91	0.95	0.96	0.93	0.87	0.81	0.67
7/26/2013	0.59	0.54	0.53	0.50	0.51	0.55	0.67	0.69	0.74	0.72	0.73	0.79	0.76	0.73	0.68	0.71	0.82	0.97	1.06	1.04	1.01	1.05	0.98	0.76
7/27/2013	0.65	0.56	0.55	0.53	0.52	0.54	0.63	0.70	0.82	0.94	1.04	1.08	1.17	1.27	1.24	1.26	1.24	1.24	1.18	1.22	1.19	1.12	1.07	0.94
7/28/2013	0.81	0.76	0.70	0.68	0.69	0.69	0.70	0.80	0.91	0.97	1.09	1.31	1.31	1.36	1.41	1.53	1.45	1.42	1.37	1.44	1.43	1.27	1.19	1.01
7/29/2013	0.84	0.75	0.72	0.70	0.71	0.75	0.81	0.92	0.90	0.94	1.02	1.06	1.15	1.16	1.25	1.33	1.47	1.60	1.65	1.58	1.64	1.57	1.39	1.14
7/30/2013	0.93	0.85	0.79	0.72	0.70	0.69	0.75	0.83	0.88	0.89	0.97	1.02	1.10	1.16	1.14	1.19	1.27	1.38	1.33	1.35	1.27	1.32	1.15	0.94
7/31/2013	0.80	0.73	0.65	0.62	0.63	0.63	0.75	0.82	0.82	0.81	0.86	0.94	0.98	1.00	1.07	1.12	1.22	1.25	1.29	1.28	1.35	1.22	1.07	0.94
8/1/2013	0.86	0.80	0.76	0.72	0.72	0.71	0.77	0.90	0.97	0.96	1.00	1.08	1.16	1.16	1.20	1.23	1.22	1.22	1.32	1.29	1.34	1.24	1.08	0.94
8/2/2013	0.80	0.72	0.69	0.72	0.66	0.70	0.81	0.84	0.96	0.97	1.01	1.08	1.19	1.19	1.25	1.38	1.45	1.47	1.53	1.43	1.37	1.32	1.26	1.08
8/3/2013	0.93	0.81	0.77	0.73	0.71	0.70	0.71	0.83	0.99	0.97	1.01	1.09	1.08	1.12	1.08	1.12	1.18	1.27	1.24	1.21	1.21	1.17	1.16	0.98
8/4/2013	0.78	0.73	0.68	0.60	0.61	0.61	0.61	0.71	0.88	0.99	0.99	1.05	1.12	1.08	1.07	1.12	1.34	1.31	1.25	1.29	1.39	1.22	1.12	0.87
8/5/2013	0.71	0.63	0.59	0.57	0.58	0.60	0.68	0.78	0.83	0.81	0.81	0.88	0.96	0.97	0.95	1.00	1.11	1.17	1.14	1.18	1.13	1.08	0.97	0.81
8/6/2013	0.64	0.59	0.55	0.54	0.53	0.53	0.62	0.69	0.83	0.86	0.83	0.85	0.84	0.88	0.92	0.99	1.06	1.17	1.18	1.19	1.18	1.04	0.92	0.74
8/7/2013	0.65	0.59	0.55	0.54	0.53	0.58	0.68	0.75	0.83	0.89	0.91	0.93	0.90	0.94	0.97	1.04	1.05	1.12	1.11	1.15	1.20	1.07	1.04	0.88

8/8/2013	0.71	0.64	0.59	0.60	0.60	0.63	0.75	0.81	0.87	0.88	0.98	0.98	1.06	1.07	1.05	1.15	1.22	1.28	1.28	1.28	1.42	1.41	1.25	1.03
8/9/2013	0.93	0.86	0.81	0.78	0.75	0.78	0.96	0.99	1.03	1.03	1.04	1.11	1.14	1.07	1.07	1.11	1.14	1.21	1.26	1.27	1.23	1.19	1.17	1.06
8/10/2013	0.90	0.85	0.80	0.75	0.72	0.71	0.76	0.92	1.05	1.15	1.20	1.26	1.37	1.40	1.43	1.45	1.39	1.43	1.38	1.36	1.28	1.30	1.13	1.02
8/11/2013	0.82	0.69	0.66	0.64	0.62	0.58	0.62	0.74	0.94	0.95	0.98	1.00	1.07	1.12	1.04	1.11	1.22	1.25	1.22	1.24	1.17	1.13	1.03	0.88
8/12/2013	0.73	0.67	0.62	0.60	0.60	0.65	0.72	0.83	0.86	0.92	0.97	1.06	1.14	1.25	1.27	1.23	1.29	1.36	1.36	1.37	1.40	1.34	1.10	0.94
8/13/2013	0.77	0.68	0.65	0.61	0.61	0.65	0.75	0.77	0.83	0.87	0.92	0.95	0.93	1.00	0.89	0.96	1.00	1.11	1.12	1.09	1.16	1.10	0.99	0.85
8/14/2013	0.70	0.64	0.61	0.60	0.59	0.63	0.72	0.80	0.88	0.86	0.80	0.82	0.80	0.89	0.87	0.89	0.94	1.05	1.00	1.08	1.07	1.06	0.96	0.77
8/15/2013	0.60	0.56	0.54	0.53	0.52	0.57	0.69	0.75	0.81	0.80	0.92	0.88	0.92	0.85	0.92	0.88	1.06	1.00	1.06	0.99	1.15	1.09	1.02	0.81
8/16/2013	0.68	0.60	0.54	0.54	0.54	0.58	0.64	0.72	0.84	0.79	0.83	0.86	0.93	0.93	0.97	0.96	1.00	1.10	1.08	1.07	1.05	1.03	0.93	0.77
8/17/2013	0.66	0.58	0.60	0.54	0.54	0.56	0.61	0.72	0.89	0.97	0.93	0.99	1.01	1.16	1.21	1.20	1.14	1.21	1.17	1.10	1.15	1.08	1.03	0.84
8/18/2013	0.72	0.66	0.62	0.60	0.56	0.58	0.60	0.66	0.83	0.88	0.93	0.97	1.03	1.04	1.05	1.08	1.16	1.19	1.24	1.16	1.11	1.12	0.97	0.79
8/19/2013	0.66	0.58	0.57	0.55	0.52	0.58	0.67	0.77	0.84	0.80	0.83	0.96	1.06	1.03	1.02	1.10	1.16	1.19	1.20	1.20	1.23	1.09	1.01	0.89
8/20/2013	0.75	0.67	0.66	0.63	0.62	0.65	0.79	0.84	0.82	0.87	0.99	1.05	1.16	1.20	1.27	1.36	1.48	1.53	1.55	1.57	1.47	1.35	1.20	1.03
8/21/2013	0.86	0.77	0.70	0.66	0.68	0.72	0.82	0.89	0.95	0.99	1.08	1.19	1.38	1.36	1.44	1.49	1.58	1.72	1.64	1.66	1.60	1.43	1.26	1.07
8/22/2013	0.94	0.87	0.79	0.77	0.77	0.76	0.84	0.93	0.99	0.98	1.10	1.18	1.27	1.07	1.12	1.17	1.23	1.22	1.32	1.36	1.40	1.33	1.18	0.97
8/23/2013	0.86	0.79	0.74	0.71	0.74	0.75	0.81	0.89	0.99	0.94	0.95	0.98	1.11	1.10	1.17	1.26	1.24	1.30	1.28	1.29	1.28	1.20	1.03	0.92
8/24/2013	0.77	0.66	0.61	0.57	0.57	0.57	0.59	0.71	0.82	0.92	0.92	0.99	1.06	0.99	1.00	1.07	1.10	1.11	1.07	1.06	1.00	0.95	0.91	0.75
8/25/2013	0.62	0.59	0.56	0.50	0.52	0.51	0.53	0.66	0.81	0.94	0.90	1.00	1.00	1.06	1.08	1.07	1.10	1.13	1.12	1.17	1.18	1.12	0.93	0.81
8/26/2013	0.66	0.65	0.60	0.59	0.58	0.64	0.74	0.77	0.77	0.83	0.81	0.87	0.92	0.92	0.98	1.05	1.17	1.16	1.28	1.36	1.24	1.20	1.09	0.90
8/27/2013	0.74	0.68	0.65	0.63	0.65	0.66	0.78	0.90	0.93	0.88	0.94	1.00	1.03	1.04	1.11	1.09	1.21	1.34	1.37	1.42	1.36	1.31	1.14	0.95
8/28/2013	0.78	0.71	0.66	0.65	0.66	0.68	0.81	0.87	0.90	0.85	0.95	1.02	1.15	1.16	1.26	1.33	1.41	1.48	1.46	1.49	1.43	1.39	1.18	1.00
8/29/2013	0.82	0.77	0.71	0.66	0.70	0.71	0.87	0.85	0.82	0.77	0.81	0.83	0.89	0.88	0.91	0.95	0.98	1.04	1.11	1.09	1.13	1.04	0.92	0.78
8/30/2013	0.63	0.57	0.54	0.58	0.57	0.59	0.71	0.76	0.76	0.73	0.76	0.83	0.81	0.88	0.89	1.00	1.12	1.17	1.20	1.26	1.22	1.13	1.05	0.94
8/31/2013	0.83	0.70	0.69	0.67	0.65	0.69	0.74	0.87	1.05	1.07	1.14	1.21	1.22	1.24	1.26	1.23	1.24	1.26	1.27	1.31	1.24	1.19	1.15	1.06
9/1/2013	0.90	0.77	0.72	0.71	0.70	0.67	0.72	0.80	0.95	1.03	1.07	1.11	1.22	1.31	1.28	1.29	1.32	1.27	1.30	1.37	1.27	1.25	1.18	0.98
9/2/2013	0.88	0.81	0.76	0.73	0.73	0.70	0.74	0.80	0.94	1.10	1.16	1.18	1.30	1.22	1.13	1.15	1.20	1.30	1.29	1.38	1.41	1.31	1.14	0.95
9/3/2013	0.79	0.73	0.70	0.68	0.70	0.75	0.86	0.88	0.89	0.97	1.00	1.08	1.12	1.09	1.06	0.97	1.01	1.11	1.20	1.20	1.26	1.11	0.98	0.80
9/4/2013	0.65	0.60	0.56	0.54	0.53	0.59	0.72	0.72	0.75	0.73	0.75	0.77	0.75	0.78	0.87	0.96	1.04	1.10	1.14	1.18	1.17	1.03	0.90	0.71
9/5/2013	0.61	0.56	0.53	0.53	0.53	0.60	0.69	0.75	0.73	0.69	0.70	0.78	0.71	0.79	0.75	0.73	0.86	0.90	0.94	0.95	0.95	0.90	0.78	0.63
9/6/2013	0.51	0.52	0.47	0.44	0.45	0.54	0.65	0.68	0.69	0.64	0.63	0.60	0.68	0.65	0.67	0.67	0.74	0.77	0.80	0.90	0.90	0.79	0.71	0.57
9/7/2013	0.50	0.45	0.43	0.43	0.43	0.45	0.46	0.60	0.77	0.80	0.75	0.78	0.80	0.78	0.69	0.77	0.80	0.84	0.87	0.87	0.88	0.79	0.73	0.65
9/8/2013	0.55	0.49	0.47	0.45	0.47	0.48	0.51	0.63	0.75	0.81	0.92	0.92	0.87	0.91	0.93	1.01	1.02	0.95	1.04	1.06	0.99	0.85	0.78	0.62
9/9/2013	0.55	0.48	0.45	0.43	0.43	0.51	0.67	0.68	0.64	0.61	0.62	0.61	0.63	0.59	0.60	0.66	0.72	0.87	0.86	0.90	0.90	0.87	0.71	0.52
9/10/2013	0.47	0.44	0.42	0.42	0.45	0.51	0.61	0.71	0.67	0.66	0.65	0.66	0.69	0.71	0.66	0.71	0.81	0.99	1.00	1.08	1.07	1.02	0.90	0.71
9/11/2013	0.61	0.57	0.56	0.53	0.53	0.59	0.71	0.76	0.82	0.77	0.83	0.95	1.06	1.15	1.30	1.43	1.52	1.64	1.56	1.59	1.62	1.45	1.26	1.02
9/12/2013	0.86	0.77	0.73	0.70	0.68	0.72	0.84	0.84	0.84	0.89	0.91	1.01	1.05	1.13	1.14	1.22	1.25	1.33	1.41	1.38	1.37	1.31	1.16	0.93
9/13/2013	0.82	0.70	0.66	0.65	0.62	0.67	0.79	0.83	0.88	0.83	0.79	0.85	0.95	1.01	1.04	1.05	1.06	1.13	1.08	1.10	1.09	0.96	0.84	0.75
9/14/2013	0.62	0.59	0.52	0.51	0.49	0.51	0.58	0.69	0.80	0.87	0.86	0.86	0.83	0.84	0.83	0.87	0.89	0.94	1.00	0.98	0.94	0.82	0.78	0.65
9/15/2013	0.53	0.50	0.48	0.45	0.45	0.44	0.52	0.61	0.76	0.84	0.81	0.88	0.77	0.86	0.79	0.86	0.87	0.91	1.08	1.08	0.93	0.84	0.74	0.61
9/16/2013	0.53	0.50	0.44	0.45	0.47	0.50	0.65	0.72	0.67	0.76	0.76	0.79	0.72	0.69	0.66	0.69	0.75	0.92	0.88	0.95	0.98	0.91	0.74	0.62
9/17/2013	0.50	0.45	0.43	0.41	0.42	0.51	0.62	0.70	0.67	0.66	0.62	0.58	0.55	0.59	0.58	0.66	0.65	0.82	0.90	0.93	0.89	0.82	0.73	0.58
9/18/2013	0.49	0.46	0.43	0.44	0.47	0.53	0.66	0.73	0.69	0.63	0.73	0.68	0.58	0.59	0.64	0.65	0.71	0.87	0.91	0.87	0.95	0.86	0.65	0.58
9/19/2013	0.49	0.47	0.42	0.42	0.46	0.50	0.61	0.69	0.64	0.63	0.60	0.60	0.66	0.63	0.63	0.67	0.73	0.85	0.88	1.01	0.97	0.86	0.72	0.58
9/20/2013	0.53	0.47	0.43	0.43	0.43	0.49	0.61	0.69	0.64	0.62	0.60	0.63	0.60	0.59	0.69	0.72	0.76	0.90	0.93	0.94	0.96	0.90	0.74	0.67
9/21/2013	0.58	0.49	0.46	0.45	0.45	0.47	0.50	0.66	0.72	0.74	0.78	0.85	0.90	0.83	0.79	0.90	0.93	0.99	0.93	0.94	0.92	0.87	0.83	0.76
9/22/2013	0.62	0.56	0.53	0.52	0.51	0.52	0.55	0.67	0.86	0.91	0.90	0.96	1.04	0.96	0.89	0.89	0.92	0.99	1.05	1.08	1.03	0.92	0.76	0.59
9/23/2013	0.50	0.46	0.44	0.42	0.43	0.52	0.63	0.71	0.66	0.64	0.68	0.73	0.66	0.65	0.65	0.60	0.72	0.82	0.86	1.01	0.96	0.87	0.68	0.53
9/24/2013	0.49	0.44	0.42	0.40	0.43	0.49	0.61	0.74	0.68	0.73	0.66	0.63	0.57	0.59	0.58	0.60	0.66	0.79	0.88	0.99	0.93	0.83	0.73	0.58
9/25/2013	0.49	0.45	0.43	0.41	0.42	0.48	0.67	0.71	0.67	0.71	0.67	0.61	0.61	0.59	0.61	0.62	0.72	0.84	0.92	1.04	0.93	0.83	0.70	0.57
9/26/2013	0.52	0.46	0.44	0.41	0.44	0.48	0.64	0.73	0.68	0.66	0.65	0.66	0.67	0.67	0.69	0.71	0.82	0.85	0.92	0.98	0.85	0.85	0.70	0.55
9/27/2013	0.49	0.46	0.43	0.45	0.48	0.51	0.66	0.71	0.65	0.66	0.62	0.66	0.69	0.62	0.65	0.67	0.75	0.77	0.80	0.93	0.83	0.78	0.71	0.59
9/28/2013	0.52	0.47	0.45	0.42	0.44	0.47	0.52	0.68	0.84	0.90	0.86	0.80	0.80	0.85	0.77	0.74	0.79	0.86	0.87	0.93	0.85	0.83	0.73	0.62
9/29/2013	0.54	0.48	0.43	0.41	0.44	0.46	0.50	0.57	0.68	0.81	0.83	0.84	0.85	0.87	0.83	0.78	0.90	0.90	0.94	1.01	0.98	0.90	0.71	0.59
9/30/2013	0.52	0.46	0.46	0.43	0.46	0.51	0.69	0.67	0.66	0.65	0.65	0.68	0.65	0.60	0.62	0.68	0.73	0.84	0.91	0.98	0.93	0.83	0.70	0.60
10/1/2013	0.48	0.44	0.42	0.42	0.41	0.49	0.59	0.69	0.62	0.58	0.63	0.64	0.64	0.73	0.66	0.64	0.73	0.84	0.93	0.95	0.90	0.86	0.73	0.60
10/2/2013	0.53	0.47	0.44	0.44	0.45	0.53	0.64	0.67	0.64	0.63	0.67	0.59	0.62	0.68	0.66	0.72	0.75	0.82	0.93	1.03	1.01	0.86	0.79	0.64
10/3/2013	0.55	0.51	0.46	0.44	0.45	0.51	0.61	0.68	0.65	0.64	0.65	0.63	0.67	0.76	0.73	0.70	0.77	0.86	0.95	0.97	0.92	0.88	0.72	0.57
10/4/2013	0.51	0.48	0.45	0.46	0.48	0.50	0.61	0.67	0.63	0.62	0.58	0.59	0.56	0.56	0.60	0.64	0.71	0.76	0.84	0.93	0.91	0.80	0.76	0.62
10/5/2013	0.53	0.48	0.47	0.45	0.44	0.45	0.50	0.60	0.74	0.83	0.86	0.78	0.87	0.83	0.82	0.78	0.79	0.88	0.93	0.90	0.84	0.80	0.73	0.64
10/6/2013	0.53	0.50	0.48	0.46	0.45	0.47	0.47	0.58	0.68	0.80	0.87	0.85	0.88	0.91	0.95	0.86	0.87	1.05	1.03	1.00	0.95	0.80	0.69	0.57
10/7/2013	0.51	0.48	0.45	0.43	0.45	0.51	0.63	0.63	0.68	0.66	0.68	0.66	0.68	0.70	0.65	0.71	0.82	0.99	1.05	1.08	1.04	0.96	0.80	0.67
10/8/2013	0.57	0.52	0.49	0.46	0.45	0.50	0.63	0.70	0.69	0.64	0.69	0.67	0.67	0.61	0.60	0.66	0.74	0.80	0.94	0.96	0.87	0.82	0.69	0.58
10/9/2013	0.47	0.44	0.45	0.44	0.43	0.45	0.65	0.68	0.63	0.68	0.65	0.63	0.63	0.58	0.58	0.63	0.69	0.91	0.97	1.00	0.93	0.85	0.75	0.62
10/10/2013	0.50	0.46	0.44	0.43	0.44	0.54	0.65	0.70	0.70	0.62	0.71	0.73	0.66	0.63	0.65	0.66	0.74	0.83	0.95	0.98	0.92	0.85	0.76	0.57
10/11/2013	0.50	0.46	0.44	0.45	0.45	0.50	0.61	0.69	0.61	0.64	0.65	0.66	0.64	0.59	0.62	0.63	0.70	0.81	0.86	0.84	0.80	0.77	0.68	0.57
10/12/2013	0.51	0.47	0.44	0.43	0.43	0.45	0.49	0.60	0.74	0.72	0.73	0.71	0.76	0.79	0.75	0.74	0.78	0.79	0.77	0.84	0.82	0.81	0.70	0.62
10/13/2013	0.54	0.47	0.47	0.46	0.44	0.43	0.49	0.59	0.71	0.82	0.82	0.85	0.74	0.71	0.74	0.83	0.84	0.82	0.92	0.93	0.89	0.84	0.74	0.59
10/14/2013	0.54	0.47	0.43	0.44	0.45	0.49	0.51	0.67	0.79	0.87	0.79	0.81	0.82	0.78	0.80	0.79	0.83	0.91	0.99	1.06	0.94	0.84	0.68	0.57
10/15/2013	0.50	0.47	0.46	0.45	0.46	0.53	0.65	0.69	0.62	0.63	0.63	0.63	0.64	0.59	0.57	0.61	0.70	0.80	0.94	0.89	0.87	0.81	0.69	0.58
10/16/2013	0.48	0.45	0.44	0.45	0.45	0.52	0.64	0.70	0.65	0.66	0.69	0.67	0.66	0.57	0.61	0.63	0.72	0.95	0.96	0.94	0.98	0.91	0.68	0.57
10/17/2013	0.51	0.44	0.42	0.42	0.43	0.49	0.62	0.68	0.66	0.65	0.67	0.59	0.61	0.62	0.62	0.64	0.73	0.82	0.94	0.97	0.95	0.89	0.73	0.62
10/18/2013	0.54	0.48	0.45	0.44	0.44	0.51	0.63	0.63	0.62	0.58	0.58	0.56	0.60	0.56	0.56	0.55	0.68	0.73	0.85	0.93	0.87	0.75	0.71	0.61
10/19/2013	0.51	0.47	0.45	0.43	0.44	0.47	0.49	0.64	0.78	0.82	0.85	0.86	0.82	0.69	0.69	0.77	0.84	0.87	0.95	0.90	0.82	0.82	0.78	0.64
10/20/2013	0.56	0.49	0.43	0.44	0.43	0.45	0.48	0.57	0.71	0.84	0.82	0.82	0.81	0.81	0.72	0.78	0.90	1.03	1.04	1.03	0.97	0.82	0.66	0.54

10/21/2013	0.49	0.44	0.45	0.45	0.49	0.55	0.67	0.76	0.67	0.70	0.66	0.60	0.57	0.57	0.59	0.62	0.71	0.88	0.94	0.97	0.96	0.83	0.69	0.58
10/22/2013	0.49	0.43	0.42	0.43	0.45	0.52	0.67	0.72	0.63	0.60	0.66	0.60	0.62	0.58	0.58	0.63	0.72	0.90	0.92	0.97	0.93	0.79	0.67	0.56
10/23/2013	0.48	0.45	0.42	0.42	0.43	0.49	0.69	0.73	0.65	0.62	0.66	0.64	0.60	0.64	0.68	0.75	0.85	0.95	0.99	0.98	0.93	0.86	0.77	0.61
10/24/2013	0.52	0.48	0.47	0.48	0.48	0.55	0.70	0.77	0.69	0.68	0.62	0.64	0.66	0.56	0.57	0.60	0.76	0.91	0.96	0.92	0.93	0.91	0.73	0.59
10/25/2013	0.52	0.50	0.49	0.50	0.51	0.57	0.67	0.76	0.69	0.72	0.66	0.69	0.61	0.65	0.64	0.71	0.82	0.89	1.01	0.93	0.96	0.84	0.75	0.66
10/26/2013	0.60	0.53	0.52	0.51	0.52	0.56	0.59	0.72	0.80	0.91	0.93	0.88	0.83	0.79	0.81	0.82	0.92	0.97	1.09	0.96	0.95	0.82	0.74	0.67
10/27/2013	0.57	0.49	0.48	0.47	0.47	0.46	0.52	0.60	0.74	0.79	0.84	0.91	0.82	0.92	0.78	0.78	0.83	0.90	0.93	0.94	0.94	0.82	0.70	0.63
10/28/2013	0.53	0.50	0.47	0.47	0.48	0.55	0.70	0.79	0.74	0.71	0.69	0.70	0.66	0.66	0.67	0.70	0.82	0.97	0.99	0.98	0.96	0.88	0.76	0.64
10/29/2013	0.55	0.48	0.47	0.52	0.54	0.58	0.73	0.75	0.70	0.73	0.69	0.67	0.68	0.65	0.64	0.70	0.75	0.86	1.03	1.10	1.04	0.94	0.82	0.65
10/30/2013	0.59	0.54	0.52	0.52	0.56	0.60	0.78	0.77	0.72	0.68	0.70	0.72	0.68	0.67	0.67	0.65	0.76	0.90	1.01	1.00	1.03	0.93	0.76	0.69
10/31/2013	0.56	0.52	0.48	0.49	0.50	0.56	0.69	0.77	0.75	0.65	0.71	0.64	0.70	0.68	0.64	0.72	0.85	0.97	0.88	0.83	0.87	0.81	0.72	0.61
11/1/2013	0.48	0.47	0.43	0.44	0.45	0.51	0.59	0.65	0.63	0.55	0.56	0.60	0.59	0.57	0.54	0.56	0.69	0.79	0.85	0.87	0.81	0.73	0.68	0.56
11/2/2013	0.49	0.45	0.41	0.41	0.41	0.43	0.47	0.59	0.65	0.74	0.82	0.78	0.69	0.70	0.65	0.66	0.71	0.80	0.87	0.83	0.85	0.80	0.68	0.56
11/3/2013	0.50	0.43	0.40	0.42	0.42	0.47	0.55	0.66	0.80	0.82	0.83	0.82	0.85	0.88	0.81	0.94	0.97	1.05	0.99	1.07	0.97	0.83	0.76	0.66
11/4/2013	0.56	0.52	0.53	0.52	0.55	0.68	0.81	0.82	0.79	0.74	0.74	0.73	0.72	0.64	0.64	0.74	0.91	1.01	1.12	1.05	1.03	1.01	0.86	0.73
11/5/2013	0.61	0.56	0.57	0.57	0.60	0.71	0.86	0.86	0.73	0.67	0.68	0.68	0.67	0.63	0.61	0.69	0.75	1.02	1.02	1.01	0.94	0.87	0.76	0.61
11/6/2013	0.55	0.49	0.49	0.49	0.51	0.56	0.74	0.77	0.72	0.70	0.66	0.61	0.53	0.53	0.49	0.54	0.75	0.97	0.93	0.93	0.92	0.89	0.71	0.55
11/7/2013	0.47	0.43	0.41	0.41	0.43	0.51	0.70	0.67	0.60	0.55	0.58	0.56	0.56	0.56	0.60	0.68	0.84	0.96	0.96	1.00	0.96	0.89	0.71	0.55
11/8/2013	0.51	0.47	0.46	0.45	0.49	0.59	0.72	0.79	0.74	0.64	0.60	0.63	0.61	0.61	0.68	0.67	0.83	0.94	0.97	0.96	1.02	0.91	0.80	0.67
11/9/2013	0.65	0.57	0.56	0.54	0.55	0.60	0.71	0.78	0.82	0.91	0.94	0.92	0.82	0.83	0.83	0.84	0.91	0.99	0.98	0.94	0.92	0.86	0.78	0.68
11/10/2013	0.61	0.55	0.54	0.52	0.51	0.52	0.57	0.64	0.76	0.84	0.87	0.83	0.84	0.85	0.82	0.86	1.00	1.01	1.00	1.00	0.97	0.86	0.76	0.64
11/11/2013	0.57	0.55	0.52	0.51	0.49	0.57	0.68	0.74	0.78	0.83	0.81	0.82	0.75	0.76	0.66	0.70	0.90	1.07	1.04	1.06	1.03	0.91	0.79	0.61
11/12/2013	0.51	0.48	0.45	0.45	0.48	0.55	0.71	0.75	0.69	0.71	0.75	0.73	0.71	0.77	0.73	0.83	0.98	1.11	1.10	1.19	1.09	0.99	0.90	0.78
11/13/2013	0.68	0.64	0.62	0.62	0.64	0.72	0.87	0.92	0.88	0.84	0.78	0.74	0.71	0.69	0.66	0.72	0.91	1.09	1.10	1.08	1.08	1.08	0.84	0.76
11/14/2013	0.68	0.65	0.62	0.60	0.65	0.73	0.82	0.84	0.80	0.75	0.66	0.68	0.59	0.59	0.62	0.68	0.85	0.98	1.01	1.01	0.92	0.90	0.83	0.66
11/15/2013	0.57	0.55	0.54	0.51	0.54	0.60	0.77	0.77	0.72	0.67	0.59	0.63	0.60	0.57	0.53	0.62	0.83	0.92	0.90	0.91	0.87	0.79	0.72	0.61
11/16/2013	0.54	0.51	0.49	0.46	0.47	0.53	0.57	0.67	0.74	0.87	0.83	0.76	0.80	0.67	0.71	0.73	0.81	0.96	0.88	0.86	0.81	0.81	0.79	0.66
11/17/2013	0.54	0.53	0.48	0.48	0.47	0.50	0.57	0.66	0.78	0.86	0.86	0.98	0.93	0.95	0.98	0.95	1.06	1.15	1.07	1.01	0.98	0.85	0.73	0.55
11/18/2013	0.47	0.44	0.41	0.41	0.44	0.52	0.68	0.68	0.65	0.65	0.61	0.66	0.60	0.56	0.56	0.62	0.78	0.90	0.90	0.94	0.91	0.85	0.75	0.60
11/19/2013	0.52	0.45	0.44	0.47	0.49	0.57	0.71	0.78	0.65	0.67	0.67	0.65	0.72	0.63	0.65	0.70	0.84	1.04	1.09	1.07	1.02	0.99	0.87	0.77
11/20/2013	0.65	0.61	0.60	0.60	0.62	0.68	0.87	0.92	0.75	0.72	0.72	0.75	0.70	0.69	0.69	0.68	0.96	1.11	1.11	1.06	1.04	1.04	0.87	0.76
11/21/2013	0.67	0.64	0.62	0.64	0.66	0.76	0.93	0.95	0.87	0.83	0.72	0.74	0.71	0.70	0.66	0.73	0.88	1.00	1.02	1.03	1.00	0.91	0.78	0.65
11/22/2013	0.59	0.54	0.53	0.53	0.52	0.59	0.77	0.80	0.81	0.72	0.70	0.68	0.72	0.72	0.68	0.71	0.82	0.94	0.97	0.94	0.89	0.78	0.69	0.60
11/23/2013	0.55	0.53	0.48	0.46	0.47	0.52	0.59	0.70	0.78	0.77	0.84	0.81	0.92	0.82	0.81	0.82	0.88	1.03	0.98	0.96	1.00	1.02	0.87	0.81
11/24/2013	0.72	0.66	0.65	0.66	0.67	0.71	0.80	0.93	1.08	1.14	1.19	1.12	1.08	1.12	1.14	1.15	1.40	1.50	1.37	1.42	1.31	1.14	1.05	0.93
11/25/2013	0.88	0.78	0.76	0.80	0.84	0.87	1.05	1.07	0.98	0.95	0.99	0.94	0.96	0.90	0.82	0.93	1.11	1.22	1.32	1.24	1.18	1.12	0.94	0.88
11/26/2013	0.72	0.72	0.72	0.70	0.69	0.80	0.91	0.93	0.89	0.94	0.90	0.80	0.79	0.75	0.76	0.82	0.99	1.03	1.11	1.08	1.09	1.01	0.88	0.77
11/27/2013	0.61	0.58	0.54	0.55	0.57	0.61	0.74	0.78	0.78	0.76	0.77	0.75	0.73	0.78	0.78	0.84	0.97	1.15	1.16	1.12	1.10	1.00	0.87	0.74
11/28/2013	0.67	0.59	0.61	0.58	0.60	0.68	0.77	0.95	1.20	1.27	1.27	1.29	1.26	1.20	1.00	0.96	1.03	1.02	1.10	1.06	1.09	1.10	0.96	0.85
11/29/2013	0.80	0.72	0.71	0.73	0.75	0.78	0.82	0.84	0.96	1.00	1.01	0.97	0.90	0.89	0.84	0.97	1.07	1.10	1.22	1.22	1.16	1.09	1.01	0.88
11/30/2013	0.79	0.75	0.71	0.74	0.72	0.78	0.85	0.92	1.00	1.01	1.00	0.96	0.97	0.89	0.92	1.02	1.07	1.17	1.24	1.20	1.25	1.08	1.04	0.94
12/1/2013	0.77	0.72	0.66	0.65	0.64	0.68	0.71	0.78	0.93	1.05	1.05	1.07	1.13	1.06	1.05	1.09	1.17	1.15	1.10	1.15	1.10	0.99	0.80	0.68
12/2/2013	0.62	0.57	0.55	0.58	0.59	0.67	0.78	0.83	0.81	0.78	0.77	0.72	0.79	0.74	0.74	0.82	0.97	1.18	1.14	1.12	1.06	1.01	0.90	0.69
12/3/2013	0.58	0.56	0.54	0.54	0.54	0.63	0.75	0.82	0.82	0.75	0.80	0.69	0.69	0.63	0.59	0.68	0.87	1.06	1.07	1.07	1.08	0.91	0.82	0.70
12/4/2013	0.61	0.56	0.55	0.54	0.61	0.65	0.84	0.84	0.74	0.75	0.69	0.65	0.62	0.60	0.62	0.68	0.93	1.08	1.15	1.10	1.12	0.99	0.91	0.71
12/5/2013	0.62	0.57	0.56	0.52	0.56	0.62	0.76	0.78	0.79	0.76	0.70	0.68	0.68	0.69	0.65	0.74	0.89	0.99	1.05	1.03	0.97	0.89	0.75	0.62
12/6/2013	0.52	0.48	0.45	0.44	0.47	0.53	0.63	0.77	0.70	0.64	0.67	0.68	0.65	0.69	0.68	0.74	0.82	0.96	1.01	1.07	0.96	0.88	0.84	0.69
12/7/2013	0.59	0.53	0.51	0.51	0.52	0.55	0.60	0.68	0.83	0.90	0.85	0.91	0.95	0.94	0.88	0.89	1.07	1.15	1.14	1.10	1.11	1.08	1.03	0.89
12/8/2013	0.75	0.69	0.65	0.63	0.63	0.70	0.73	0.81	0.97	1.05	1.01	1.08	1.06	1.04	0.99	1.02	1.17	1.26	1.26	1.37	1.19	1.07	0.95	0.81
12/9/2013	0.70	0.63	0.65	0.63	0.67	0.77	0.90	0.95	0.88	0.85	0.84	0.86	0.86	0.80	0.85	0.88	1.06	1.22	1.25	1.24	1.13	1.10	0.91	0.77
12/10/2013	0.66	0.59	0.57	0.60	0.61	0.71	0.85	0.83	0.83	0.84	0.84	0.86	0.85	0.93	0.94	0.98	1.08	1.28	1.26	1.26	1.16	1.05	0.94	0.84
12/11/2013	0.70	0.67	0.67	0.67	0.68	0.77	0.93	0.96	0.90	0.87	0.85	0.81	0.85	0.80	0.77	0.83	1.04	1.15	1.22	1.22	1.20	1.10	1.01	0.84
12/12/2013	0.76	0.72	0.70	0.71	0.73	0.82	0.97	1.05	0.90	0.89	0.87	0.88	0.83	0.86	0.82	0.95	1.09	1.24	1.34	1.30	1.40	1.31	1.12	0.97
12/13/2013	0.88	0.81	0.79	0.76	0.80	0.89	1.02	1.10	1.05	0.96	0.91	0.89	0.86	0.88	0.87	0.89	1.10	1.19	1.23	1.26	1.24	1.15	1.06	0.90
12/14/2013	0.80	0.74	0.72	0.72	0.74	0.79	0.85	0.95	1.09	1.13	1.11	1.14	1.13	1.09	1.16	1.20	1.34	1.39	1.41	1.47	1.36	1.24	1.15	1.03
12/15/2013	0.89	0.79	0.75	0.72	0.70	0.73	0.75	0.81	0.98	1.13	1.16	1.13	1.18	1.18	1.08	1.09	1.31	1.42	1.38	1.36	1.30	1.23	1.02	0.85
12/16/2013	0.76	0.69	0.70	0.68	0.70	0.81	0.93	0.95	0.88	0.87	0.89	0.91	0.86	0.87	0.85	0.97	1.11	1.29	1.38	1.35	1.33	1.31	1.15	0.98
12/17/2013	0.86	0.81	0.77	0.77	0.82	0.92	1.02	1.10	1.03	0.98	1.01	1.00	1.01	1.00	1.02	1.11	1.25	1.41	1.41	1.40	1.39	1.28	1.18	1.00
12/18/2013	0.87	0.79	0.77	0.77	0.78	0.87	0.99	1.01	0.98	0.87	0.84	0.87	0.83	0.77	0.73	0.83	1.00	1.19	1.25	1.30	1.22	1.21	1.04	0.88
12/19/2013	0.78	0.72	0.71	0.71	0.73	0.80	0.91	0.95	0.93	0.88	0.85	0.78	0.76	0.68	0.76	0.76	0.85	1.12	1.14	1.24	1.17	1.15	0.99	0.79
12/20/2013	0.67	0.63	0.63	0.62	0.63	0.72	0.80	0.85	0.88	0.82	0.78	0.77	0.73	0.74	0.75	0.74	0.92	1.10	1.13	1.10	1.12	1.00	0.85	0.72
12/21/2013	0.62	0.57	0.53	0.53	0.54	0.58	0.63	0.76	0.90	0.90	0.85	0.87	0.90	0.81	0.83	0.88	0.96	1.16	1.06	1.04	0.95	0.90	0.84	0.69
12/22/2013	0.58	0.51	0.49	0.48	0.47	0.49	0.53	0.61	0.74	0.86	0.91	0.93	0.93	0.87	0.88	0.88	1.01	1.13	1.09	1.11	1.07	0.92	0.85	0.63
12/23/2013	0.55	0.50	0.48	0.48	0.49	0.56	0.64	0.81	0.80	0.86	0.81	0.83	0.89	0.80	0.86	0.94	1.12	1.17	1.21	1.14	1.12	1.06	0.95	0.81
12/24/2013	0.68	0.63	0.58	0.57	0.58	0.66	0.75	0.81	0.96	1.07	1.10	1.10	1.12	1.08	1.03	1.00	1.10	1.22	1.13	1.12	1.09	1.06	1.01	1.00
12/25/2013	0.86	0.76	0.74	0.72	0.72	0.77	0.86	0.99	1.15	1.19	1.23	1.16	1.22	1.13	1.09	1.10	1.13	1.21	1.19	1.19	1.20	1.17	1.09	0.92
12/26/2013	0.84	0.77	0.75	0.72	0.74	0.79	0.80	0.88	0.96	0.98	1.05	1.00	1.06	1.01	0.97	0.92	1.13	1.30	1.28	1.17	1.17	1.05	0.96	0.85
12/27/2013	0.76	0.71	0.71	0.70	0.74	0.77	0.82	0.88	0.98	0.95	0.93	0.88	0.87	0.82	0.82	0.84	1.01	1.18	1.23	1.23	1.25	1.12	0.99	0.86
12/28/2013	0.76	0.71	0.69	0.68	0.68	0.71	0.78	0.83	0.90	1.01	1.06	0.99	1.07	0.98	0.90	0.88	0.96	1.09	1.06	1.10	1.10	1.00	0.89	0.81
12/29/2013	0.71	0.65	0.64	0.64	0.62	0.63	0.67	0.73	0.84	0.95	0.94	0.98	1.12	1.20	1.18	1.12	1.16	1.25	1.20	1.06	1.15	0.97	0.87	0.72
12/30/2013	0.65	0.59	0.58	0.59	0.60	0.67	0.78	0.81	0.88	0.85	0.90	0.92	0.96	0.94	0.91	0.99	1.15	1.20	1.30	1.32	1.21	1.13	1.06	0.93
12/31/2013	0.83	0.75	0.77	0.78	0.79	0.87	0.96	1.01	1.02	0.94	0.98	1.02	1.02	1.07	1.09	1.05	1.12	1.25	1.21	1.19	1.16	1.08	1.09	1.00
1/1/2014	0.88	0.82	0.76	0.77	0.77	0.82	0.82	0.85	0.97	1.01	1.00	1.08	0.98	1.08	1.04	1.03	1.24	1.31	1.34	1.26	1.20	1.13	0.98	0.83
1/2/2014	0.77	0.73	0.71	0.71	0.74	0.81	0.89	0.92	0.95	0.99	0.99	1.07	1.02	1.09	1.08	1.13	1.26	1.43	1.42	1.41	1.32	1.32	1.14	1.03

1/3/2014	0.99	0.95	0.90	0.91	0.93	1.01	1.09	1.14	1.19	1.23	1.24	1.27	1.24	1.21	1.14	1.24	1.33	1.47	1.44	1.45	1.37	1.30	1.21	1.12
1/4/2014	1.01	1.00	0.98	0.95	0.99	0.99	1.04	1.10	1.28	1.24	1.17	1.16	1.17	1.12	1.06	1.08	1.14	1.33	1.36	1.28	1.21	1.14	1.00	0.95
1/5/2014	0.83	0.80	0.78	0.75	0.75	0.82	0.84	0.91	1.01	1.09	1.08	1.09	1.14	1.13	1.09	1.16	1.24	1.27	1.26	1.23	1.22	1.07	0.90	0.77
1/6/2014	0.67	0.62	0.58	0.59	0.62	0.68	0.78	0.84	0.79	0.78	0.80	0.78	0.84	0.78	0.77	0.83	1.01	1.11	1.19	1.12	1.15	1.08	0.98	0.84
1/7/2014	0.70	0.68	0.67	0.72	0.74	0.85	1.04	1.15	1.06	1.05	1.04	0.99	0.99	0.96	0.92	1.02	1.22	1.44	1.45	1.52	1.41	1.33	1.20	1.07
1/8/2014	1.00	0.95	0.93	0.94	0.93	1.03	1.10	1.27	1.17	1.05	1.05	1.09	1.00	0.96	0.94	1.01	1.18	1.32	1.36	1.37	1.28	1.17	1.12	1.00
1/9/2014	0.89	0.83	0.80	0.80	0.82	0.88	0.96	1.06	1.06	0.94	0.86	0.85	0.86	0.83	0.91	1.01	1.15	1.23	1.22	1.33	1.34	1.14	1.05	0.89
1/10/2014	0.83	0.80	0.77	0.78	0.80	0.95	1.04	1.07	1.02	0.98	0.96	0.94	0.90	0.91	0.90	1.01	1.09	1.31	1.21	1.12	1.17	1.01	0.88	0.82
1/11/2014	0.73	0.66	0.66	0.63	0.61	0.62	0.70	0.75	0.83	0.91	0.98	0.94	0.99	1.01	0.87	1.03	1.07	1.11	1.08	1.06	0.98	0.85	0.79	0.76
1/12/2014	0.66	0.59	0.54	0.50	0.49	0.51	0.58	0.66	0.79	0.87	0.84	0.85	0.94	1.00	1.05	1.05	1.10	1.21	1.16	1.14	1.11	0.98	0.87	0.76
1/13/2014	0.64	0.60	0.61	0.62	0.66	0.72	0.82	0.91	0.86	0.77	0.74	0.78	0.77	0.70	0.70	0.79	0.95	1.13	1.18	1.14	1.08	0.99	0.88	0.68
1/14/2014	0.61	0.57	0.51	0.50	0.53	0.60	0.72	0.79	0.75	0.77	0.74	0.68	0.73	0.74	0.81	0.82	0.92	1.01	1.07	1.06	1.00	0.91	0.79	0.68
1/15/2014	0.55	0.54	0.51	0.53	0.57	0.67	0.80	0.86	0.84	0.80	0.78	0.66	0.68	0.68	0.74	0.75	0.90	1.14	1.14	1.16	1.15	0.98	0.84	0.71
1/16/2014	0.65	0.60	0.59	0.57	0.59	0.65	0.80	0.86	0.79	0.72	0.79	0.71	0.68	0.76	0.75	0.79	0.91	1.04	1.12	1.09	1.10	0.99	0.83	0.69
1/17/2014	0.60	0.57	0.54	0.54	0.58	0.65	0.82	0.82	0.79	0.75	0.75	0.75	0.68	0.67	0.68	0.76	0.87	1.02	1.06	1.12	1.09	0.97	0.92	0.78
1/18/2014	0.69	0.63	0.64	0.58	0.58	0.60	0.64	0.76	0.87	0.97	0.95	1.03	1.09	1.03	0.98	0.97	1.08	1.13	1.13	1.14	1.09	1.07	0.90	0.76
1/19/2014	0.69	0.65	0.62	0.62	0.62	0.67	0.68	0.75	0.93	1.00	1.07	1.04	0.99	0.98	0.96	0.91	1.06	1.08	1.13	1.15	1.05	1.02	0.90	0.73
1/20/2014	0.66	0.62	0.62	0.61	0.63	0.67	0.73	0.76	0.80	0.78	0.87	0.92	0.93	0.91	0.86	0.92	1.02	1.13	1.21	1.21	1.19	1.06	0.92	0.80
1/21/2014	0.75	0.67	0.67	0.68	0.71	0.80	0.94	0.97	0.93	0.89	0.90	0.91	0.94	0.93	0.92	1.00	1.20	1.38	1.39	1.37	1.25	1.17	1.04	0.92
1/22/2014	0.88	0.90	0.86	0.89	0.89	0.94	1.00	1.10	1.15	1.15	1.14	1.15	1.07	1.04	1.05	1.04	1.16	1.43	1.46	1.37	1.28	1.26	1.08	0.98
1/23/2014	0.94	0.89	0.88	0.89	0.91	1.00	1.17	1.19	1.08	1.07	1.00	0.93	0.93	0.89	0.89	0.94	1.10	1.33	1.38	1.31	1.25	1.17	1.17	0.99
1/24/2014	0.90	0.86	0.90	0.88	0.93	0.96	1.16	1.16	1.16	1.07	1.00	0.97	0.97	0.92	0.97	1.02	1.10	1.29	1.34	1.37	1.31	1.24	1.12	0.95
1/25/2014	0.88	0.87	0.86	0.86	0.84	0.89	0.89	0.93	1.05	1.10	1.12	1.09	1.18	1.14	1.09	1.08	1.17	1.22	1.19	1.17	1.09	1.06	0.97	0.87
1/26/2014	0.79	0.74	0.73	0.74	0.77	0.81	0.88	1.00	1.13	1.21	1.24	1.19	1.15	1.20	1.19	1.19	1.29	1.47	1.43	1.50	1.32	1.18	1.02	0.86
1/27/2014	0.76	0.73	0.70	0.71	0.69	0.82	0.93	0.98	0.85	0.79	0.74	0.78	0.83	0.76	0.74	0.75	0.96	1.10	1.17	1.20	1.14	1.12	0.98	0.80
1/28/2014	0.75	0.74	0.71	0.72	0.74	0.86	1.04	1.03	0.98	0.96	0.96	0.95	1.01	0.91	0.92	0.96	1.08	1.20	1.32	1.26	1.25	1.24	1.04	0.95
1/29/2014	0.86	0.79	0.79	0.80	0.81	0.86	1.04	1.09	1.03	0.99	0.95	0.95	0.96	0.92	0.87	0.81	0.92	1.16	1.24	1.27	1.18	1.19	1.03	0.90
1/30/2014	0.82	0.79	0.83	0.80	0.83	0.91	1.02	1.12	1.04	0.90	0.90	0.86	0.86	0.82	0.80	0.84	0.96	1.18	1.32	1.30	1.18	1.04	0.99	0.86
1/31/2014	0.81	0.77	0.74	0.73	0.73	0.82	0.91	0.94	0.88	0.92	0.83	0.82	0.86	0.77	0.75	0.80	0.86	1.08	1.07	1.08	1.02	1.01	0.86	0.73
2/1/2014	0.67	0.64	0.63	0.61	0.63	0.65	0.70	0.76	0.87	0.91	0.89	0.89	0.90	0.87	0.94	0.84	0.92	1.11	1.13	0.94	0.96	0.87	0.81	0.74
2/2/2014	0.65	0.60	0.55	0.57	0.58	0.60	0.63	0.75	0.90	0.87	0.97	0.95	0.89	0.87	0.95	0.93	1.09	1.09	1.14	1.03	1.02	0.88	0.77	0.66
2/3/2014	0.61	0.54	0.53	0.52	0.55	0.61	0.74	0.79	0.76	0.74	0.82	0.80	0.82	0.77	0.75	0.83	0.97	1.17	1.21	1.15	1.07	1.02	0.86	0.71
2/4/2014	0.65	0.62	0.65	0.65	0.66	0.77	0.95	0.91	0.84	0.80	0.77	0.74	0.76	0.73	0.68	0.70	0.82	1.05	1.08	1.06	1.03	0.94	0.88	0.80
2/5/2014	0.69	0.62	0.65	0.62	0.63	0.72	0.76	0.84	0.92	0.94	1.01	1.06	1.05	1.10	1.06	1.01	1.09	1.18	1.29	1.18	1.08	0.98	0.93	0.87
2/6/2014	0.75	0.68	0.66	0.66	0.68	0.74	0.93	0.95	0.90	0.83	0.81	0.83	0.82	0.78	0.87	0.86	0.92	1.07	1.09	1.15	1.12	1.10	0.97	0.86
2/7/2014	0.77	0.72	0.71	0.72	0.72	0.80	0.97	0.97	0.89	0.80	0.77	0.77	0.78	0.79	0.80	0.80	0.91	1.01	1.05	1.12	1.10	1.02	0.95	0.83
2/8/2014	0.78	0.75	0.72	0.70	0.72	0.75	0.85	0.93	1.00	1.09	0.97	0.97	1.06	0.97	0.97	1.10	1.00	1.06	1.09	1.09	1.06	0.99	0.95	0.83
2/9/2014	0.72	0.68	0.67	0.69	0.65	0.70	0.74	0.83	0.93	0.95	1.02	1.10	1.07	1.05	0.93	1.00	1.13	1.20	1.23	1.19	1.11	0.98	0.89	0.80
2/10/2014	0.72	0.67	0.65	0.66	0.70	0.79	0.95	1.00	0.88	0.83	0.80	0.80	0.74	0.78	0.75	0.77	0.93	1.21	1.27	1.26	1.20	1.12	0.99	0.86
2/11/2014	0.77	0.73	0.75	0.75	0.77	0.87	1.00	0.99	0.93	0.86	0.84	0.90	0.89	0.85	0.83	0.81	0.95	1.08	1.17	1.20	1.18	1.09	0.96	0.81
2/12/2014	0.78	0.73	0.76	0.80	0.80	0.88	1.03	1.08	1.00	0.93	0.89	0.84	0.85	0.87	0.76	0.87	0.98	1.12	1.24	1.22	1.15	1.05	0.96	0.89
2/13/2014	0.75	0.71	0.69	0.69	0.71	0.77	0.86	0.93	0.98	0.97	0.99	0.96	1.01	1.04	0.98	1.02	1.09	1.29	1.29	1.24	1.17	1.04	0.86	0.74
2/14/2014	0.67	0.63	0.61	0.63	0.63	0.72	0.80	0.89	0.88	0.85	0.79	0.79	0.79	0.80	0.88	0.83	0.90	1.05	1.08	1.17	1.10	1.00	0.93	0.80
2/15/2014	0.73	0.68	0.65	0.63	0.61	0.65	0.70	0.81	0.89	0.92	1.03	1.01	1.06	1.06	1.05	1.08	1.11	1.27	1.25	1.22	1.07	0.96	0.93	0.81
2/16/2014	0.73	0.68	0.69	0.66	0.71	0.74	0.79	0.82	0.96	0.90	0.94	0.99	1.06	0.97	0.94	0.91	0.96	1.04	1.10	1.16	1.08	1.01	0.95	0.84
2/17/2014	0.74	0.72	0.70	0.72	0.76	0.82	0.91	0.99	0.97	0.95	0.88	0.87	0.86	0.91	0.94	0.95	1.02	1.16	1.25	1.27	1.18	1.16	0.99	0.84
2/18/2014	0.78	0.76	0.74	0.76	0.78	0.81	0.92	0.99	0.94	0.88	0.86	0.85	0.94	0.95	0.90	0.87	1.04	1.12	1.21	1.24	1.16	0.98	0.94	0.76
2/19/2014	0.72	0.68	0.67	0.69	0.71	0.77	0.88	0.98	0.96	0.88	0.79	0.76	0.74	0.81	0.88	0.89	0.99	1.13	1.11	1.10	1.07	1.05	0.93	0.76
2/20/2014	0.65	0.60	0.63	0.62	0.62	0.70	0.83	0.91	0.84	0.74	0.71	0.67	0.73	0.64	0.63	0.70	0.82	0.97	1.10	1.07	0.98	0.94	0.79	0.74
2/21/2014	0.64	0.61	0.59	0.59	0.60	0.69	0.78	0.84	0.84	0.83	0.78	0.76	0.80	0.81	0.85	0.90	0.94	1.05	1.04	1.01	0.97	0.94	0.85	0.71
2/22/2014	0.60	0.58	0.57	0.57	0.57	0.61	0.67	0.75	0.86	0.90	0.85	0.89	0.93	0.88	0.78	0.74	0.76	0.89	1.01	0.96	0.92	0.94	0.87	0.75
2/23/2014	0.72	0.64	0.56	0.56	0.58	0.58	0.64	0.76	0.85	0.88	0.79	0.86	0.82	0.83	0.81	0.75	0.84	0.94	1.18	1.11	1.03	0.93	0.79	0.66
2/24/2014	0.56	0.51	0.50	0.50	0.55	0.64	0.81	0.87	0.74	0.68	0.63	0.69	0.72	0.79	0.79	0.77	0.91	1.11	1.18	1.19	1.13	1.06	0.96	0.78
2/25/2014	0.74	0.71	0.68	0.68	0.71	0.76	0.97	0.98	0.92	0.91	0.89	0.83	0.83	0.80	0.77	0.81	0.88	1.08	1.12	1.10	1.09	1.08	0.96	0.86
2/26/2014	0.76	0.73	0.73	0.73	0.75	0.81	0.96	1.02	0.93	0.90	0.85	0.88	0.85	0.85	0.86	0.89	0.98	1.14	1.25	1.21	1.21	1.14	0.99	0.88
2/27/2014	0.78	0.75	0.75	0.74	0.81	0.85	0.99	1.09	1.01	0.92	0.85	0.84	0.81	0.81	0.83	0.88	1.02	1.10	1.21	1.23	1.22	1.17	1.12	0.93
2/28/2014	0.83	0.84	0.83	0.84	0.88	0.98	1.07	1.08	0.97	0.94	0.87	0.83	0.86	0.88	0.84	0.88	0.96	1.12	1.24	1.15	1.12	1.03	1.01	0.90
3/1/2014	0.83	0.79	0.81	0.79	0.77	0.85	0.92	0.97	1.04	1.04	0.97	1.01	0.97	0.94	1.00	0.96	0.91	1.01	1.16	1.11	1.11	1.00	0.96	0.85
3/2/2014	0.72	0.67	0.66	0.65	0.66	0.67	0.74	0.82	0.92	1.03	1.03	0.96	1.00	0.91	0.95	1.00	1.10	1.19	1.30	1.14	1.05	0.96	0.86	0.72
3/3/2014	0.66	0.60	0.61	0.61	0.67	0.72	0.89	0.92	0.87	0.84	0.85	0.84	0.85	0.81	0.85	0.87	1.07	1.26	1.30	1.31	1.22	1.14	1.03	0.92
3/4/2014	0.85	0.82	0.80	0.84	0.87	0.91	1.11	1.13	0.98	0.98	0.91	0.94	0.86	0.80	0.84	0.92	0.98	1.08	1.16	1.24	1.24	1.10	0.99	0.88
3/5/2014	0.77	0.72	0.69	0.70	0.73	0.80	0.97	0.99	0.89	0.86	0.81	0.81	0.77	0.78	0.79	0.81	0.90	1.05	1.17	1.12	1.11	1.07	0.98	0.83
3/6/2014	0.79	0.78	0.77	0.76	0.79	0.87	1.01	1.02	0.99	0.93	0.92	0.88	0.88	0.83	0.78	0.81	0.91	1.12	1.24	1.26	1.27	1.12	0.95	0.86
3/7/2014	0.78	0.75	0.73	0.74	0.78	0.86	1.00	1.01	1.00	0.90	0.86	0.80	0.83	0.80	0.77	0.77	0.83	1.01	1.05	1.09	1.03	0.94	0.87	0.77
3/8/2014	0.67	0.65	0.65	0.64	0.64	0.69	0.74	0.79	0.87	0.95	0.99	0.85	0.88	0.85	0.82	0.81	0.79	0.86	0.97	0.93	0.94	0.94	0.81	0.70
3/9/2014	0.62	0.57	0.00	0.56	0.56	0.57	0.59	0.69	0.79	0.86	0.94	0.96	0.91	0.93	0.87	0.81	0.87	0.99	1.05	1.12	1.16	0.98	0.87	0.74
3/10/2014	0.66	0.58	0.56	0.59	0.59	0.69	0.84	0.98	0.87	0.81	0.82	0.82	0.78	0.81	0.72	0.71	0.83	0.86	0.95	1.10	1.03	0.94	0.85	0.71
3/11/2014	0.62	0.58	0.58	0.55	0.58	0.66	0.77	0.84	0.77	0.73	0.72	0.68	0.66	0.66	0.62	0.66	0.67	0.77	0.88	0.97	1.00	0.90	0.80	0.63
3/12/2014	0.55	0.52	0.52	0.51	0.53	0.59	0.69	0.84	0.73	0.69	0.67	0.68	0.68	0.67	0.71	0.69	0.75	0.92	0.96	1.01	0.95	0.88	0.79	0.66
3/13/2014	0.56	0.51	0.49	0.49	0.52	0.62	0.80	0.85	0.94	0.91	0.88	0.86	0.82	0.91	0.83	0.89	0.93	1.09	1.24	1.25	1.32	1.20	1.03	0.90
3/14/2014	0.81	0.78	0.75	0.77	0.82	0.87	1.02	1.09	1.03	0.98	0.92	0.91	0.82	0.82	0.89	0.85	0.87	0.91	1.02	1.12	1.12	1.04	0.90	0.74
3/15/2014	0.66	0.62	0.61	0.58	0.61	0.62	0.70	0.83	0.91	0.95	0.95	0.92	0.83	0.82	0.84	0.83	0.81	0.92	0.97	0.92	0.93	0.93	0.85	0.75
3/16/2014	0.67	0.58	0.56	0.58	0.59	0.63	0.68	0.83	0.92	1.02	0.99	1.04	1.03	0.94	0.90	0.88	0.89	1.07	1.12	1.10	1.10	1.05	0.91	0.78
3/17/2014	0.67	0.64	0.62	0.64	0.69	0.77	0.94	1.05	1.00	0.94	0.94	0.90	0.87	0.93	0.88	0.83	0.87	1.01	1.13	1.20	1.16	1.02	0.95	0.84

3/18/2014	0.75	0.72	0.70	0.72	0.73	0.82	0.98	1.03	0.91	0.90	0.89	0.86	0.77	0.79	0.77	0.74	0.74	0.96	0.99	1.13	1.09	1.03	0.83	0.73
3/19/2014	0.66	0.63	0.64	0.66	0.68	0.76	0.89	0.98	0.87	0.74	0.76	0.68	0.69	0.74	0.67	0.67	0.77	0.87	0.94	1.04	1.04	0.98	0.88	0.73
3/20/2014	0.67	0.61	0.59	0.59	0.61	0.67	0.79	0.89	0.85	0.74	0.65	0.63	0.69	0.62	0.62	0.61	0.74	0.83	0.96	0.92	0.94	0.91	0.75	0.69
3/21/2014	0.63	0.57	0.53	0.54	0.59	0.66	0.75	0.84	0.79	0.71	0.67	0.75	0.68	0.72	0.73	0.70	0.76	0.77	0.84	0.99	1.00	0.93	0.78	0.71
3/22/2014	0.67	0.58	0.56	0.59	0.59	0.62	0.72	0.78	0.89	1.03	0.97	0.96	0.94	0.96	0.89	0.85	0.76	0.75	0.76	0.96	0.95	0.78	0.80	0.67
3/23/2014	0.60	0.56	0.53	0.56	0.54	0.57	0.64	0.81	0.89	0.97	0.95	0.95	0.92	0.89	1.01	0.99	0.98	1.05	1.10	1.14	1.09	0.93	0.85	0.69
3/24/2014	0.66	0.66	0.65	0.67	0.69	0.80	0.94	1.06	0.91	0.81	0.86	0.84	0.88	0.81	0.81	0.77	0.81	1.02	1.09	1.14	1.20	1.09	0.94	0.78
3/25/2014	0.73	0.69	0.66	0.68	0.71	0.81	0.96	1.05	0.89	0.89	0.80	0.80	0.75	0.76	0.78	0.75	0.83	0.95	1.07	1.10	1.04	0.90	0.89	0.75
3/26/2014	0.68	0.63	0.63	0.64	0.68	0.74	0.95	1.05	0.96	0.92	0.88	0.93	0.98	0.93	0.87	0.93	1.02	1.08	1.15	1.15	1.15	1.06	0.90	0.81
3/27/2014	0.75	0.72	0.71	0.71	0.77	0.81	1.00	1.01	0.91	0.91	0.96	0.87	0.79	0.76	0.72	0.70	0.82	0.94	1.02	1.08	1.10	0.97	0.86	0.76
3/28/2014	0.67	0.61	0.56	0.57	0.61	0.71	0.93	0.96	0.81	0.76	0.73	0.68	0.71	0.68	0.77	0.80	0.88	0.94	0.86	0.91	0.96	0.86	0.79	0.67
3/29/2014	0.63	0.59	0.55	0.54	0.55	0.57	0.64	0.75	0.87	0.83	0.94	0.84	0.88	0.82	0.90	0.89	0.84	0.87	0.91	0.94	0.96	0.89	0.85	0.71
3/30/2014	0.66	0.55	0.55	0.54	0.55	0.58	0.61	0.69	0.86	0.93	1.01	0.95	0.98	0.96	0.88	0.96	0.96	1.15	1.13	1.14	1.08	0.93	0.92	0.70
3/31/2014	0.62	0.61	0.59	0.60	0.64	0.71	0.81	0.97	0.80	0.81	0.78	0.85	0.84	0.85	0.87	0.87	1.09	1.18	1.09	1.15	1.03	0.98	0.93	0.73
4/1/2014	0.61	0.57	0.56	0.56	0.60	0.69	0.84	0.95	0.80	0.74	0.68	0.67	0.71	0.64	0.64	0.58	0.67	0.79	0.88	0.92	0.93	0.83	0.78	0.62
4/2/2014	0.56	0.53	0.53	0.54	0.56	0.67	0.77	0.82	0.78	0.74	0.68	0.59	0.62	0.65	0.65	0.67	0.70	0.83	0.94	0.97	0.93	0.90	0.82	0.68
4/3/2014	0.58	0.55	0.52	0.53	0.56	0.64	0.77	0.85	0.86	0.70	0.66	0.64	0.65	0.67	0.62	0.61	0.67	0.77	0.87	0.93	0.96	0.87	0.76	0.62
4/4/2014	0.53	0.51	0.50	0.52	0.54	0.61	0.73	0.82	0.74	0.71	0.74	0.66	0.63	0.58	0.63	0.65	0.73	0.82	0.89	0.93	0.90	0.85	0.81	0.68
4/5/2014	0.58	0.58	0.52	0.53	0.56	0.56	0.64	0.70	0.74	0.87	0.85	0.84	0.81	0.84	0.80	0.71	0.72	0.77	0.75	0.93	0.91	0.86	0.82	0.68
4/6/2014	0.57	0.54	0.51	0.50	0.53	0.55	0.64	0.72	0.80	0.83	0.85	0.84	0.71	0.73	0.74	0.68	0.68	0.82	0.84	0.97	0.99	0.88	0.69	0.57
4/7/2014	0.50	0.47	0.47	0.47	0.50	0.61	0.74	0.75	0.70	0.60	0.63	0.64	0.68	0.60	0.59	0.64	0.72	0.89	0.91	0.96	0.96	0.86	0.75	0.62
4/8/2014	0.52	0.47	0.45	0.46	0.48	0.62	0.72	0.75	0.72	0.69	0.63	0.67	0.67	0.67	0.66	0.64	0.72	0.75	0.75	0.84	0.90	0.83	0.73	0.61
4/9/2014	0.51	0.49	0.46	0.47	0.49	0.59	0.76	0.76	0.68	0.59	0.61	0.56	0.54	0.53	0.51	0.65	0.69	0.71	0.77	0.86	0.89	0.87	0.71	0.57
4/10/2014	0.51	0.48	0.47	0.47	0.51	0.64	0.75	0.79	0.73	0.70	0.74	0.68	0.57	0.61	0.60	0.65	0.73	0.70	0.75	0.91	0.97	0.85	0.74	0.60
4/11/2014	0.55	0.51	0.45	0.46	0.51	0.55	0.71	0.71	0.71	0.73	0.63	0.59	0.62	0.59	0.54	0.58	0.59	0.70	0.72	0.83	0.85	0.78	0.68	0.59
4/12/2014	0.48	0.41	0.42	0.41	0.41	0.47	0.54	0.60	0.73	0.78	0.79	0.72	0.65	0.66	0.63	0.66	0.66	0.74	0.82	0.81	0.78	0.77	0.65	0.59
4/13/2014	0.49	0.44	0.39	0.39	0.39	0.43	0.49	0.61	0.70	0.77	0.79	0.78	0.79	0.73	0.76	0.69	0.71	0.83	0.83	0.86	0.83	0.84	0.65	0.51
4/14/2014	0.44	0.40	0.40	0.40	0.43	0.52	0.61	0.65	0.65	0.60	0.61	0.54	0.55	0.57	0.55	0.59	0.68	0.72	0.75	0.83	0.95	0.82	0.69	0.52
4/15/2014	0.44	0.40	0.37	0.37	0.40	0.47	0.59	0.70	0.66	0.68	0.64	0.59	0.53	0.59	0.61	0.70	0.77	0.88	0.90	1.00	0.93	0.84	0.67	0.58
4/16/2014	0.48	0.46	0.46	0.46	0.49	0.60	0.70	0.86	0.86	0.74	0.72	0.67	0.67	0.63	0.60	0.63	0.72	0.79	0.84	0.91	0.98	0.88	0.79	0.64
4/17/2014	0.58	0.53	0.56	0.54	0.57	0.70	0.80	0.85	0.75	0.80	0.73	0.74	0.64	0.69	0.64	0.68	0.70	0.83	0.82	0.91	0.98	0.94	0.86	0.72
4/18/2014	0.62	0.57	0.55	0.55	0.58	0.69	0.78	0.86	0.87	0.81	0.82	0.82	0.72	0.79	0.74	0.72	0.73	0.78	0.78	0.86	0.92	0.94	0.75	0.61
4/19/2014	0.57	0.51	0.49	0.51	0.52	0.53	0.61	0.69	0.82	0.89	0.87	0.81	0.80	0.81	0.72	0.79	0.74	0.79	0.78	0.84	0.85	0.76	0.79	0.64
4/20/2014	0.53	0.47	0.45	0.45	0.47	0.50	0.61	0.75	0.81	0.90	0.87	0.91	0.90	0.86	0.73	0.66	0.63	0.65	0.70	0.85	0.88	0.84	0.69	0.55
4/21/2014	0.50	0.45	0.45	0.46	0.50	0.58	0.69	0.75	0.74	0.72	0.67	0.59	0.62	0.60	0.58	0.57	0.62	0.67	0.74	0.74	0.80	0.77	0.62	0.51
4/22/2014	0.44	0.40	0.41	0.41	0.45	0.53	0.64	0.69	0.63	0.63	0.66	0.64	0.55	0.57	0.56	0.57	0.62	0.71	0.73	0.79	0.85	0.76	0.74	0.54
4/23/2014	0.45	0.41	0.39	0.39	0.41	0.51	0.62	0.68	0.64	0.62	0.63	0.62	0.63	0.59	0.59	0.62	0.66	0.79	0.79	0.90	0.95	0.80	0.66	0.56
4/24/2014	0.48	0.44	0.42	0.45	0.48	0.57	0.62	0.72	0.70	0.68	0.60	0.60	0.63	0.59	0.57	0.58	0.66	0.68	0.79	0.79	0.91	0.86	0.68	0.56
4/25/2014	0.49	0.47	0.44	0.43	0.49	0.58	0.62	0.68	0.70	0.67	0.60	0.61	0.56	0.55	0.64	0.57	0.57	0.67	0.67	0.71	0.73	0.69	0.67	0.57
4/26/2014	0.50	0.50	0.48	0.44	0.44	0.49	0.56	0.64	0.74	0.79	0.82	0.86	0.95	0.98	0.86	0.88	0.91	0.91	0.86	0.82	0.83	0.78	0.75	0.64
4/27/2014	0.53	0.49	0.50	0.48	0.49	0.52	0.54	0.71	0.80	0.87	0.88	0.92	0.86	0.89	0.89	0.85	0.86	0.86	0.95	0.90	0.93	0.81	0.70	0.54
4/28/2014	0.50	0.46	0.43	0.45	0.48	0.55	0.70	0.74	0.64	0.61	0.61	0.61	0.55	0.60	0.53	0.58	0.70	0.76	0.83	0.90	0.89	0.74	0.64	0.57
4/29/2014	0.51	0.45	0.43	0.44	0.46	0.52	0.68	0.70	0.66	0.64	0.65	0.64	0.67	0.64	0.65	0.66	0.73	0.77	0.89	1.00	0.96	0.85	0.78	0.64
4/30/2014	0.54	0.49	0.49	0.50	0.51	0.58	0.72	0.80	0.72	0.70	0.71	0.70	0.67	0.70	0.67	0.76	0.89	0.89	0.97	0.91	0.92	0.91	0.82	0.63
5/1/2014	0.58	0.52	0.50	0.50	0.49	0.57	0.71	0.76	0.75	0.65	0.68	0.68	0.66	0.60	0.57	0.66	0.75	0.75	0.73	0.81	0.83	0.80	0.67	0.56
5/2/2014	0.49	0.42	0.41	0.40	0.41	0.48	0.62	0.76	0.64	0.62	0.57	0.57	0.55	0.52	0.55	0.60	0.66	0.66	0.67	0.72	0.81	0.76	0.72	0.57
5/3/2014	0.50	0.43	0.41	0.41	0.43	0.46	0.56	0.62	0.69	0.75	0.79	0.70	0.74	0.74	0.67	0.63	0.67	0.68	0.75	0.76	0.83	0.75	0.66	0.56
5/4/2014	0.48	0.43	0.41	0.41	0.42	0.43	0.48	0.61	0.75	0.77	0.77	0.84	0.82	0.80	0.77	0.72	0.79	0.77	0.83	0.88	0.95	0.89	0.69	0.52
5/5/2014	0.47	0.43	0.42	0.41	0.43	0.52	0.67	0.73	0.67	0.63	0.65	0.63	0.62	0.58	0.61	0.61	0.69	0.79	0.78	0.87	0.90	0.82	0.69	0.59
5/6/2014	0.48	0.44	0.42	0.40	0.44	0.49	0.65	0.71	0.65	0.59	0.58	0.59	0.58	0.58	0.62	0.60	0.72	0.77	0.87	0.82	0.88	0.85	0.69	0.54
5/7/2014	0.47	0.42	0.42	0.42	0.45	0.51	0.65	0.73	0.60	0.65	0.58	0.58	0.54	0.55	0.57	0.59	0.65	0.65	0.76	0.76	0.81	0.85	0.68	0.55
5/8/2014	0.48	0.43	0.41	0.41	0.44	0.50	0.64	0.76	0.70	0.59	0.60	0.59	0.60	0.55	0.56	0.61	0.63	0.74	0.74	0.85	0.85	0.84	0.72	0.56
5/9/2014	0.50	0.45	0.42	0.39	0.40	0.45	0.59	0.67	0.59	0.55	0.59	0.69	0.62	0.66	0.63	0.70	0.73	0.74	0.69	0.78	0.82	0.75	0.66	0.56
5/10/2014	0.49	0.42	0.41	0.39	0.39	0.41	0.46	0.57	0.74	0.78	0.77	0.88	0.81	0.74	0.72	0.72	0.72	0.79	0.88	0.87	0.87	0.87	0.77	0.63
5/11/2014	0.54	0.48	0.45	0.43	0.44	0.45	0.48	0.57	0.81	0.82	0.81	0.76	0.68	0.67	0.72	0.64	0.69	0.75	0.74	0.81	0.96	0.90	0.77	0.63
5/12/2014	0.50	0.45	0.41	0.40	0.41	0.47	0.61	0.63	0.63	0.60	0.64	0.66	0.69	0.66	0.61	0.69	0.71	0.79	0.82	0.89	0.95	0.89	0.79	0.59
5/13/2014	0.48	0.42	0.40	0.38	0.41	0.47	0.63	0.64	0.63	0.57	0.62	0.56	0.59	0.59	0.55	0.57	0.62	0.77	0.81	0.88	0.87	0.86	0.68	0.59
5/14/2014	0.48	0.43	0.41	0.38	0.43	0.51	0.64	0.72	0.63	0.62	0.58	0.57	0.55	0.58	0.54	0.57	0.63	0.70	0.75	0.79	0.85	0.77	0.65	0.54
5/15/2014	0.50	0.42	0.38	0.37	0.41	0.45	0.57	0.65	0.59	0.56	0.53	0.61	0.63	0.57	0.62	0.62	0.68	0.78	0.79	0.83	0.84	0.79	0.70	0.55
5/16/2014	0.49	0.44	0.40	0.41	0.41	0.46	0.59	0.64	0.64	0.58	0.57	0.63	0.69	0.58	0.61	0.62	0.69	0.75	0.81	0.85	0.86	0.82	0.68	0.57
5/17/2014	0.51	0.45	0.41	0.40	0.41	0.46	0.51	0.68	0.76	0.76	0.77	0.73	0.74	0.71	0.73	0.81	0.77	0.74	0.76	0.87	0.81	0.85	0.70	0.65
5/18/2014	0.54	0.47	0.40	0.39	0.38	0.41	0.46	0.52	0.66	0.72	0.73	0.75	0.70	0.63	0.64	0.63	0.61	0.67	0.80	0.78	0.87	0.83	0.67	0.53
5/19/2014	0.45	0.41	0.37	0.38	0.40	0.46	0.61	0.71	0.60	0.53	0.59	0.55	0.54	0.58	0.53	0.61	0.68	0.74	0.86	0.89	0.95	0.91	0.72	0.56
5/20/2014	0.45	0.42	0.40	0.39	0.41	0.47	0.63	0.69	0.64	0.59	0.64	0.56	0.51	0.55	0.60	0.66	0.71	0.78	0.80	0.82	0.94	0.88	0.71	0.56
5/21/2014	0.46	0.41	0.37	0.38	0.39	0.46	0.57	0.69	0.60	0.56	0.59	0.64	0.52	0.63	0.57	0.60	0.70	0.73	0.80	0.85	0.87	0.83	0.66	0.56
5/22/2014	0.48	0.42	0.40	0.38	0.40	0.44	0.61	0.66	0.66	0.58	0.59	0.55	0.56	0.60	0.67	0.66	0.73	0.78	0.81	0.82	0.88	0.81	0.77	0.58
5/23/2014	0.48	0.46	0.41	0.39	0.42	0.46	0.59	0.69	0.67	0.64	0.62	0.64	0.63	0.68	0.63	0.64	0.72	0.73	0.71	0.77	0.83	0.70	0.66	0.61
5/24/2014	0.54	0.49	0.45	0.42	0.43	0.45	0.50	0.61	0.71	0.78	0.80	0.77	0.76	0.75	0.66	0.68	0.71	0.77	0.73	0.75	0.72	0.75	0.66	0.59
5/25/2014	0.51	0.45	0.42	0.41	0.40	0.42	0.49	0.58	0.65	0.78	0.75	0.71	0.72	0.75	0.68	0.73	0.74	0.71	0.77	0.86	0.85	0.87	0.79	0.64
5/26/2014	0.52	0.48	0.44	0.43	0.44	0.45	0.50	0.59	0.76	0.81	0.87	0.88	0.82	0.74	0.75	0.76	0.76	0.84	0.85	0.92	0.96	0.85	0.74	0.61
5/27/2014	0.49	0.44	0.41	0.38	0.40	0.50	0.63	0.62	0.61	0.58	0.58	0.65	0.65	0.65	0.67	0.69	0.75	0.80	0.84	0.92	0.96	0.89	0.72	0.57
5/28/2014	0.47	0.43	0.39	0.39	0.41	0.46	0.59	0.64	0.63	0.62	0.59	0.62	0.65	0.62	0.62	0.70	0.80	0.88	0.88	0.94	0.97	0.93	0.78	0.56
5/29/2014	0.48	0.42	0.40	0.38	0.40	0.51	0.66	0.75	0.65	0.59	0.58	0.58	0.60	0.54	0.54	0.64	0.63	0.73	0.74	0.79	0.90	0.82	0.72	0.54
5/30/2014	0.45	0.40	0.39	0.39	0.39	0.45	0.60	0.69	0.57	0.53	0.56	0.59	0.56	0.65	0.66	0.64	0.74	0.72	0.73	0.78	0.80	0.76	0.70	0.58

5/31/2014	0.47	0.44	0.41	0.39	0.38	0.44	0.53	0.62	0.77	0.79	0.73	0.77	0.82	0.74	0.68	0.66	0.76	0.73	0.78	0.74	0.78	0.75	0.66	0.60
6/1/2014	0.49	0.44	0.40	0.39	0.43	0.43	0.47	0.54	0.65	0.81	0.77	0.75	0.77	0.78	0.70	0.76	0.81	0.80	0.85	0.92	0.89	0.91	0.77	0.71
6/2/2014	0.46	0.39	0.38	0.38	0.38	0.49	0.59	0.66	0.59	0.54	0.52	0.53	0.60	0.60	0.68	0.74	0.81	0.86	0.87	0.90	0.88	0.86	0.78	0.58
6/3/2014	0.50	0.45	0.40	0.42	0.40	0.44	0.58	0.66	0.60	0.52	0.57	0.64	0.72	0.67	0.70	0.74	0.84	0.88	0.86	0.86	0.89	0.84	0.78	0.56
6/4/2014	0.49	0.40	0.39	0.42	0.39	0.43	0.58	0.64	0.62	0.61	0.62	0.59	0.60	0.59	0.66	0.64	0.68	0.77	0.86	0.90	0.94	0.91	0.73	0.57
6/5/2014	0.46	0.44	0.41	0.40	0.40	0.45	0.61	0.63	0.61	0.60	0.62	0.62	0.68	0.74	0.73	0.70	0.75	0.89	0.87	0.84	0.93	0.86	0.73	0.61
6/6/2014	0.47	0.44	0.43	0.41	0.40	0.47	0.61	0.69	0.63	0.58	0.61	0.59	0.58	0.58	0.63	0.61	0.67	0.76	0.79	0.75	0.76	0.79	0.67	0.56
6/7/2014	0.46	0.42	0.41	0.40	0.39	0.42	0.48	0.62	0.68	0.73	0.72	0.78	0.85	0.80	0.74	0.79	0.85	0.90	0.89	0.90	0.88	0.91	0.80	0.69
6/8/2014	0.58	0.53	0.47	0.44	0.41	0.44	0.49	0.60	0.79	0.83	0.83	0.89	0.90	0.95	0.93	0.97	1.01	1.03	1.04	1.17	1.04	1.04	0.92	0.69
6/9/2014	0.58	0.51	0.46	0.46	0.44	0.53	0.62	0.70	0.66	0.68	0.65	0.63	0.65	0.67	0.67	0.68	0.79	0.88	0.90	0.89	0.93	0.94	0.83	0.63
6/10/2014	0.51	0.48	0.42	0.41	0.42	0.45	0.59	0.67	0.65	0.65	0.63	0.67	0.64	0.67	0.67	0.70	0.84	0.92	0.92	0.98	0.98	0.97	0.79	0.64
6/11/2014	0.53	0.50	0.48	0.44	0.44	0.51	0.67	0.70	0.63	0.56	0.58	0.62	0.63	0.63	0.66	0.74	0.82	0.82	0.82	0.82	0.89	0.83	0.77	0.58
6/12/2014	0.51	0.47	0.43	0.41	0.42	0.48	0.65	0.66	0.62	0.58	0.65	0.65	0.64	0.62	0.59	0.62	0.74	0.86	0.85	0.84	0.88	0.89	0.81	0.62
6/13/2014	0.53	0.48	0.42	0.41	0.43	0.48	0.62	0.68	0.65	0.66	0.68	0.71	0.72	0.70	0.67	0.79	0.83	0.82	0.83	0.86	0.86	0.87	0.74	0.62
6/14/2014	0.54	0.48	0.44	0.42	0.40	0.44	0.50	0.62	0.81	0.83	0.85	0.88	0.88	0.94	0.97	0.93	0.94	0.86	0.82	0.82	0.79	0.80	0.73	0.63
6/15/2014	0.58	0.53	0.45	0.44	0.42	0.41	0.45	0.58	0.76	0.80	0.74	0.84	0.84	0.87	0.83	0.92	0.88	0.86	0.86	0.92	0.93	1.01	0.87	0.68
6/16/2014	0.55	0.46	0.44	0.43	0.43	0.48	0.58	0.66	0.67	0.63	0.70	0.73	0.75	0.76	0.77	0.83	0.90	1.04	1.03	1.00	1.01	0.97	0.83	0.63
6/17/2014	0.53	0.46	0.44	0.44	0.43	0.49	0.61	0.66	0.72	0.68	0.68	0.70	0.74	0.83	0.84	0.90	0.98	1.05	1.06	1.09	1.09	1.06	0.89	0.76
6/18/2014	0.62	0.55	0.52	0.53	0.49	0.54	0.68	0.74	0.77	0.79	0.85	0.93	0.97	1.05	1.08	1.20	1.23	1.40	1.37	1.28	1.36	1.23	1.11	0.88
6/19/2014	0.76	0.66	0.61	0.61	0.58	0.62	0.74	0.79	0.76	0.73	0.77	0.74	0.79	0.84	0.90	0.96	1.05	1.21	1.13	1.11	1.07	1.10	0.90	0.69
6/20/2014	0.57	0.51	0.48	0.46	0.46	0.47	0.57	0.64	0.66	0.74	0.71	0.67	0.73	0.73	0.85	0.88	0.92	0.94	0.89	0.88	0.88	0.83	0.84	0.64
6/21/2014	0.54	0.48	0.44	0.44	0.40	0.44	0.52	0.61	0.70	0.80	0.80	0.86	0.87	0.93	0.88	0.88	0.89	0.87	0.89	0.88	0.80	0.83	0.76	0.69
6/22/2014	0.57	0.51	0.44	0.41	0.41	0.44	0.50	0.54	0.68	0.76	0.77	0.74	0.81	0.80	0.80	0.87	0.94	0.96	0.93	0.92	0.95	0.93	0.79	0.67
6/23/2014	0.56	0.47	0.44	0.42	0.41	0.47	0.57	0.66	0.63	0.69	0.73	0.77	0.80	0.77	0.79	0.83	0.84	0.99	0.98	0.96	0.96	1.00	0.80	0.61
6/24/2014	0.51	0.50	0.45	0.43	0.42	0.48	0.58	0.66	0.69	0.69	0.70	0.72	0.78	0.75	0.81	0.88	0.91	1.01	0.98	0.96	0.96	0.98	0.85	0.66
6/25/2014	0.57	0.51	0.48	0.46	0.46	0.51	0.59	0.65	0.72	0.77	0.81	0.89	0.91	0.96	1.04	1.10	1.19	1.22	1.26	1.28	1.32	1.23	1.09	0.93
6/26/2014	0.80	0.72	0.66	0.64	0.64	0.67	0.82	0.84	0.84	0.87	0.97	1.01	1.09	1.11	1.17	1.17	1.17	1.20	1.19	1.13	1.05	1.02	0.92	0.76
6/27/2014	0.64	0.56	0.52	0.48	0.47	0.50	0.62	0.68	0.68	0.70	0.69	0.75	0.80	0.87	0.87	0.89	0.92	1.01	1.03	0.87	0.91	0.86	0.84	0.70
6/28/2014	0.58	0.51	0.48	0.45	0.42	0.46	0.53	0.59	0.75	0.78	0.88	0.91	0.98	1.07	1.05	1.05	1.05	1.09	1.03	1.00	0.97	0.95	0.86	0.76
6/29/2014	0.65	0.54	0.50	0.47	0.48	0.47	0.51	0.57	0.68	0.81	0.93	0.80	1.02	1.06	1.05	1.10	1.08	1.12	1.15	1.08	1.03	1.03	0.90	0.72
6/30/2014	0.59	0.54	0.51	0.52	0.53	0.54	0.62	0.74	0.72	0.75	0.83	0.91	1.03	1.04	1.08	1.18	1.30	1.33	1.28	1.27	1.22	1.21	1.06	0.91
7/1/2014	0.75	0.70	0.65	0.62	0.65	0.67	0.75	0.85	0.92	1.01	1.08	1.20	1.23	1.25	1.29	1.38	1.44	1.47	1.49	1.50	1.50	1.41	1.28	1.10
7/2/2014	0.89	0.83	0.76	0.73	0.71	0.72	0.83	0.91	0.96	1.08	1.23	1.22	1.34	1.48	1.53	1.60	1.62	1.61	1.63	1.55	1.56	1.54	1.40	1.18
7/3/2014	1.03	0.89	0.84	0.80	0.77	0.84	0.92	1.08	1.12	1.08	1.17	1.32	1.36	1.43	1.54	1.60	1.65	1.71	1.73	1.61	1.56	1.53	1.52	1.26
7/4/2014	1.03	0.90	0.80	0.74	0.70	0.71	0.73	0.84	0.98	1.15	1.23	1.16	1.16	1.23	1.10	1.05	1.15	1.06	1.07	1.03	1.02	0.94	0.92	0.77
7/5/2014	0.64	0.63	0.59	0.55	0.52	0.52	0.54	0.64	0.79	0.89	0.91	0.89	0.95	0.98	0.91	0.92	1.00	1.04	0.96	0.96	0.88	0.94	0.93	0.89
7/6/2014	0.72	0.60	0.57	0.51	0.52	0.52	0.54	0.66	0.79	0.85	0.93	0.98	1.06	1.18	1.20	1.21	1.22	1.23	1.27	1.12	1.21	1.24	1.18	0.98
7/7/2014	0.80	0.72	0.65	0.62	0.58	0.61	0.76	0.79	0.83	0.86	0.97	1.11	1.17	1.24	1.30	1.34	1.42	1.53	1.60	1.49	1.52	1.42	1.26	1.01
7/8/2014	0.90	0.83	0.79	0.74	0.71	0.73	0.82	0.88	0.92	0.95	1.01	1.18	1.25	1.39	1.50	1.50	1.54	1.67	1.60	1.48	1.46	1.45	1.34	1.15
7/9/2014	0.99	0.87	0.78	0.72	0.70	0.74	0.84	0.93	0.99	1.03	1.07	1.15	1.21	1.19	1.28	1.38	1.41	1.55	1.48	1.45	1.46	1.46	1.29	1.09
7/10/2014	0.94	0.88	0.78	0.73	0.71	0.74	0.82	0.89	0.94	0.91	1.01	1.05	1.16	1.17	1.18	1.14	1.30	1.38	1.37	1.35	1.34	1.37	1.20	1.02
7/11/2014	0.89	0.77	0.68	0.65	0.62	0.67	0.77	0.81	0.84	0.87	0.93	1.07	1.18	1.18	1.20	1.26	1.32	1.27	1.27	1.23	1.21	1.26	1.12	0.98
7/12/2014	0.79	0.69	0.64	0.63	0.61	0.63	0.69	0.76	0.89	0.93	0.96	1.13	1.16	1.24	1.33	1.35	1.22	1.39	1.28	1.25	1.18	1.13	1.08	0.93
7/13/2014	0.79	0.68	0.63	0.61	0.60	0.61	0.68	0.77	0.98	1.02	1.16	1.18	1.13	1.23	1.27	1.33	1.35	1.36	1.32	1.39	1.31	1.25	1.18	0.97
7/14/2014	0.85	0.78	0.75	0.72	0.72	0.74	0.84	0.92	0.92	1.05	1.06	1.11	1.14	1.21	1.25	1.25	1.28	1.44	1.46	1.41	1.36	1.32	1.22	1.01
7/15/2014	0.90	0.79	0.76	0.72	0.71	0.74	0.87	0.93	1.00	0.97	1.02	1.11	1.12	1.13	1.16	1.26	1.28	1.36	1.35	1.36	1.36	1.39	1.25	1.04
7/16/2014	0.89	0.78	0.75	0.71	0.69	0.73	0.81	0.86	0.86	0.87	0.92	0.88	0.90	0.96	0.93	1.01	1.08	1.19	1.30	1.27	1.37	1.25	1.12	0.93
7/17/2014	0.83	0.69	0.66	0.63	0.61	0.64	0.75	0.82	0.81	0.81	0.86	0.93	0.90	0.98	1.03	1.11	1.18	1.20	1.24	1.20	1.18	1.13	1.01	0.86
7/18/2014	0.71	0.63	0.57	0.55	0.52	0.57	0.63	0.73	0.79	0.79	0.84	0.89	0.99	1.13	1.08	1.11	1.16	1.23	1.22	1.11	1.11	1.08	0.99	0.84
7/19/2014	0.75	0.68	0.61	0.57	0.55	0.58	0.64	0.75	0.81	0.90	0.95	1.01	1.00	1.12	1.14	1.08	1.00	1.02	1.02	1.05	1.00	0.98	0.92	0.85
7/20/2014	0.73	0.65	0.60	0.57	0.55	0.57	0.61	0.69	0.81	0.86	0.95	0.97	1.00	0.99	1.04	1.02	1.12	1.03	1.08	1.10	1.17	1.13	0.97	0.80
7/21/2014	0.70	0.62	0.55	0.55	0.53	0.58	0.68	0.78	0.71	0.75	0.81	0.93	0.91	0.99	1.02	1.07	1.14	1.20	1.16	1.19	1.28	1.18	1.02	0.92
7/22/2014	0.72	0.64	0.61	0.57	0.56	0.59	0.73	0.81	0.83	0.92	0.96	1.02	1.12	1.16	1.26	1.34	1.43	1.53	1.49	1.48	1.45	1.41	1.28	1.07
7/23/2014	0.90	0.82	0.77	0.72	0.71	0.74	0.85	0.92	0.99	1.03	1.05	1.20	1.27	1.40	1.46	1.48	1.62	1.68	1.64	1.60	1.58	1.48	1.24	1.01
7/24/2014	0.90	0.80	0.71	0.71	0.69	0.70	0.81	0.94	0.90	0.95	0.95	1.00	1.03	1.08	1.22	1.20	1.23	1.23	1.27	1.22	1.20	1.19	1.05	0.88
7/25/2014	0.76	0.67	0.63	0.59	0.58	0.63	0.71	0.76	0.79	0.78	0.78	0.84	0.92	0.93	0.97	1.00	1.00	1.09	1.14	1.14	1.09	1.04	1.01	0.85
7/26/2014	0.75	0.64	0.60	0.55	0.53	0.57	0.60	0.71	0.80	0.90	1.01	1.11	1.20	1.20	1.19	1.17	1.15	1.13	1.05	1.04	0.96	0.97	0.90	0.85
7/27/2014	0.75	0.65	0.62	0.59	0.56	0.59	0.63	0.74	0.83	0.92	0.98	1.04	1.03	1.13	1.11	1.07	1.11	1.11	1.19	1.18	1.17	1.15	1.01	0.85
7/28/2014	0.72	0.65	0.60	0.59	0.59	0.69	0.77	0.86	0.88	0.88	0.92	0.99	1.03	1.06	1.11	1.22	1.33	1.45	1.38	1.38	1.29	1.26	1.08	0.88
7/29/2014	0.74	0.67	0.62	0.58	0.56	0.61	0.71	0.80	0.78	0.80	0.82	0.85	0.93	1.01	0.97	1.02	1.11	1.13	1.07	1.09	1.10	1.06	1.00	0.86
7/30/2014	0.72	0.62	0.58	0.55	0.53	0.59	0.63	0.75	0.76	0.82	0.81	0.84	0.89	0.88	0.90	1.01	1.08	1.17	1.14	1.11	1.02	1.04	0.98	0.80
7/31/2014	0.68	0.62	0.58	0.54	0.55	0.61	0.70	0.76	0.80	0.87	0.87	0.90	0.86	0.92	0.99	1.04	1.06	1.16	1.11	1.15	1.14	1.12	1.02	0.79
8/1/2014	0.72	0.66	0.60	0.62	0.60	0.66	0.74	0.81	0.86	0.87	0.96	1.03	1.08	1.17	1.21	1.22	1.34	1.28	1.26	1.29	1.28	1.21	1.06	0.97
8/2/2014	0.85	0.77	0.73	0.72	0.68	0.70	0.72	0.81	0.90	0.96	1.02	1.02	1.02	1.00	1.00	0.97	1.03	1.00	0.96	0.97	1.00	1.00	0.88	0.75
8/3/2014	0.63	0.57	0.53	0.52	0.51	0.53	0.54	0.64	0.82	0.91	0.98	0.97	1.02	1.03	0.98	0.88	0.92	1.01	1.00	1.19	1.28	1.15	0.95	0.81
8/4/2014	0.68	0.59	0.56	0.57	0.53	0.59	0.70	0.79	0.84	0.85	0.86	0.97	1.01	1.08	1.11	1.21	1.28	1.27	1.28	1.31	1.31	1.30	1.17	1.00
8/5/2014	0.87	0.74	0.72	0.68	0.65	0.69	0.76	0.86	0.84	0.91	1.01	1.19	1.22	1.27	1.36	1.51	1.56	1.61	1.60	1.60	1.50	1.46	1.30	1.06
8/6/2014	0.90	0.81	0.77	0.72	0.73	0.75	0.83	0.91	0.90	0.93	0.96	0.99	1.05	1.11	1.13	1.26	1.36	1.42	1.41	1.41	1.40	1.34	1.23	0.95
8/7/2014	0.81	0.70	0.63	0.59	0.56	0.61	0.71	0.79	0.78	0.76	0.85	0.87	0.96	1.02	1.08	1.09	1.08	1.11	1.08	1.04	1.05	1.06	0.97	0.80
8/8/2014	0.65	0.59	0.54	0.52	0.53	0.58	0.68	0.70	0.75	0.73	0.81	0.84	0.82	0.84	0.90	0.99	1.09	1.19	1.19	1.16	1.17	1.15	1.05	0.88
8/9/2014	0.76	0.67	0.61	0.56	0.56	0.57	0.64	0.78	0.94	0.99	1.04	1.14	1.24	1.35	1.32	1.33	1.34	1.31	1.25	1.20	1.23	1.16	1.03	0.92
8/10/2014	0.77	0.70	0.64	0.61	0.58	0.63	0.62	0.70	0.91	0.98	1.01	1.10	1.17	1.14	1.28	1.32	1.30	1.31	1.26	1.34	1.27	1.26	1.17	0.98
8/11/2014	0.83	0.72	0.68	0.61	0.60	0.62	0.75	0.80	0.87	0.93	0.99	1.06	1.12	1.19	1.29	1.26	1.30	1.35	1.24	1.27	1.27	1.20	1.04	0.85
8/12/2014	0.75	0.66	0.62	0.60	0.62	0.62	0.70	0.80	0.86	0.86	0.86	0.95	0.97	1.08	1.11	1.16	1.18	1.21	1.20	1.24	1.20	1.18	1.11	0.91

8/13/2014	0.79	0.75	0.69	0.67	0.65	0.69	0.79	0.85	0.81	0.89	0.96	0.99	0.91	0.93	0.97	0.89	1.04	1.12	1.20	1.12	1.07	1.04	0.97	0.82
8/14/2014	0.71	0.60	0.56	0.55	0.54	0.58	0.70	0.76	0.77	0.76	0.80	0.85	0.91	0.89	0.91	0.93	1.01	1.04	1.02	1.02	1.05	1.01	0.94	0.78
8/15/2014	0.67	0.61	0.57	0.55	0.53	0.59	0.70	0.69	0.75	0.77	0.78	0.79	0.80	0.85	0.86	0.89	0.91	0.97	0.96	0.97	0.93	0.88	0.83	0.68
8/16/2014	0.61	0.58	0.51	0.50	0.49	0.50	0.54	0.67	0.77	0.87	1.01	0.99	1.00	0.99	0.95	0.97	1.02	1.12	1.03	1.02	1.10	0.96	0.90	0.77
8/17/2014	0.68	0.63	0.61	0.58	0.56	0.57	0.61	0.68	0.85	0.93	0.99	1.00	1.08	1.06	1.10	1.16	1.12	1.12	1.18	1.18	1.27	1.13	1.00	0.80
8/18/2014	0.67	0.61	0.56	0.53	0.54	0.61	0.76	0.82	0.79	0.81	0.81	0.83	0.98	0.87	0.97	1.04	1.16	1.19	1.09	1.10	1.18	1.09	0.90	0.77
8/19/2014	0.65	0.58	0.56	0.51	0.52	0.55	0.66	0.73	0.76	0.78	0.74	0.82	0.88	0.86	0.89	0.94	0.95	1.07	1.11	1.11	1.08	1.00	0.95	0.83
8/20/2014	0.63	0.56	0.55	0.53	0.53	0.57	0.68	0.72	0.74	0.77	0.87	0.86	0.84	0.89	0.97	1.03	1.15	1.17	1.14	1.16	1.15	1.22	1.02	0.78
8/21/2014	0.63	0.59	0.55	0.53	0.53	0.57	0.70	0.74	0.82	0.78	0.78	0.79	0.83	0.83	0.94	1.08	1.05	1.18	1.10	1.11	1.14	1.09	1.04	0.86
8/22/2014	0.76	0.68	0.61	0.59	0.57	0.64	0.72	0.78	0.83	0.83	0.83	0.86	0.95	0.87	0.88	0.88	0.88	0.94	1.02	1.07	1.02	0.98	0.89	0.78
8/23/2014	0.63	0.62	0.59	0.56	0.53	0.53	0.57	0.71	0.83	0.87	0.96	0.96	0.96	0.91	0.89	0.93	0.91	0.98	0.95	0.96	0.94	0.91	0.88	0.74
8/24/2014	0.63	0.57	0.52	0.51	0.51	0.53	0.56	0.60	0.73	0.87	0.84	0.89	0.91	0.89	0.91	1.00	0.95	0.98	0.97	1.06	1.19	1.07	0.96	0.72
8/25/2014	0.63	0.60	0.53	0.50	0.52	0.58	0.68	0.71	0.72	0.74	0.81	0.86	0.98	1.03	1.07	1.14	1.19	1.32	1.24	1.28	1.35	1.27	1.06	0.91
8/26/2014	0.75	0.66	0.59	0.58	0.59	0.63	0.73	0.77	0.76	0.81	0.87	0.97	1.00	1.06	1.10	1.24	1.31	1.35	1.42	1.33	1.23	1.19	1.04	0.89
8/27/2014	0.69	0.64	0.64	0.55	0.56	0.61	0.72	0.77	0.76	0.80	0.87	0.97	1.03	1.11	1.26	1.31	1.42	1.49	1.49	1.43	1.45	1.38	1.25	0.98
8/28/2014	0.89	0.75	0.72	0.68	0.68	0.72	0.80	0.82	0.78	0.84	0.87	0.93	1.08	1.08	1.07	1.11	1.17	1.28	1.20	1.27	1.15	1.07	0.99	0.80
8/29/2014	0.69	0.63	0.60	0.55	0.55	0.58	0.72	0.70	0.70	0.72	0.75	0.82	0.82	0.87	0.90	0.88	0.97	1.05	1.07	1.05	1.08	1.00	0.92	0.75
8/30/2014	0.64	0.57	0.50	0.50	0.49	0.52	0.56	0.71	0.82	0.90	0.92	0.91	0.92	0.91	0.93	0.97	1.03	1.03	1.01	0.99	0.93	0.88	0.87	0.68
8/31/2014	0.60	0.57	0.54	0.52	0.52	0.54	0.57	0.73	0.95	1.01	1.17	1.17	1.15	1.22	1.15	1.21	1.25	1.32	1.24	1.26	1.26	1.25	1.14	1.02
9/1/2014	0.86	0.81	0.74	0.67	0.66	0.70	0.76	0.84	0.99	1.16	1.36	1.53	1.58	1.64	1.76	1.66	1.72	1.73	1.69	1.70	1.69	1.60	1.35	1.12
9/2/2014	1.01	0.91	0.82	0.78	0.78	0.80	0.95	0.94	1.02	1.10	1.17	1.27	1.43	1.45	1.60	1.62	1.73	1.90	1.85	1.75	1.67	1.55	1.38	1.12
9/3/2014	0.98	0.88	0.88	0.83	0.81	0.84	0.95	0.99	0.98	0.94	0.94	1.04	1.02	1.12	1.29	1.30	1.35	1.47	1.43	1.40	1.40	1.30	1.07	0.89
9/4/2014	0.75	0.68	0.61	0.58	0.57	0.62	0.75	0.77	0.78	0.75	0.83	0.84	0.95	1.07	1.11	1.19	1.29	1.35	1.37	1.29	1.34	1.19	1.03	0.90
9/5/2014	0.79	0.70	0.67	0.62	0.58	0.63	0.78	0.75	0.76	0.85	0.91	0.99	1.10	1.26	1.27	1.40	1.47	1.47	1.44	1.45	1.47	1.31	1.20	1.08
9/6/2014	0.95	0.90	0.83	0.85	0.80	0.82	0.85	0.99	1.09	1.27	1.37	1.54	1.67	1.72	1.80	1.82	1.78	1.78	1.68	1.58	1.52	1.35	1.24	1.08
9/7/2014	0.94	0.82	0.75	0.71	0.68	0.69	0.73	0.78	0.90	1.01	1.06	1.09	1.15	1.18	1.19	1.14	1.18	1.22	1.19	1.30	1.28	1.11	0.87	0.73
9/8/2014	0.64	0.57	0.53	0.54	0.52	0.59	0.68	0.74	0.72	0.71	0.75	0.75	0.78	0.76	0.79	0.88	0.87	0.96	0.97	1.00	0.98	0.91	0.76	0.68
9/9/2014	0.56	0.50	0.46	0.46	0.47	0.52	0.65	0.64	0.66	0.65	0.65	0.64	0.72	0.71	0.74	0.76	0.81	0.87	0.94	0.94	0.94	0.85	0.76	0.65
9/10/2014	0.55	0.50	0.49	0.49	0.48	0.53	0.63	0.67	0.71	0.71	0.65	0.72	0.75	0.73	0.79	0.79	0.89	1.01	1.03	1.04	1.01	0.96	0.80	0.67
9/11/2014	0.59	0.56	0.52	0.52	0.54	0.56	0.71	0.73	0.70	0.64	0.65	0.73	0.78	0.79	0.80	0.85	0.91	1.07	1.09	1.11	1.17	1.06	0.97	0.81
9/12/2014	0.67	0.60	0.54	0.52	0.50	0.55	0.66	0.70	0.68	0.69	0.72	0.77	0.75	0.77	0.77	0.83	0.92	0.96	0.97	0.94	0.93	0.86	0.80	0.72
9/13/2014	0.59	0.52	0.47	0.46	0.45	0.46	0.49	0.64	0.75	0.75	0.81	0.91	0.83	0.86	0.84	0.85	0.91	0.97	0.89	0.91	0.84	0.87	0.77	0.63
9/14/2014	0.58	0.51	0.47	0.45	0.47	0.47	0.52	0.69	0.76	0.86	0.95	0.86	0.87	0.89	0.84	0.82	0.82	0.83	0.91	0.99	0.93	0.79	0.72	0.60
9/15/2014	0.50	0.43	0.42	0.42	0.42	0.48	0.57	0.65	0.65	0.68	0.63	0.69	0.69	0.62	0.63	0.65	0.75	0.82	0.88	0.93	0.93	0.82	0.68	0.59
9/16/2014	0.49	0.42	0.41	0.41	0.43	0.48	0.63	0.68	0.61	0.63	0.58	0.60	0.62	0.60	0.60	0.63	0.73	0.88	0.95	0.97	0.93	0.89	0.70	0.62
9/17/2014	0.55	0.44	0.44	0.42	0.43	0.49	0.61	0.64	0.62	0.65	0.66	0.67	0.70	0.64	0.72	0.72	0.76	0.84	0.87	0.98	0.91	0.83	0.71	0.60
9/18/2014	0.52	0.45	0.42	0.40	0.43	0.49	0.60	0.64	0.67	0.61	0.58	0.60	0.67	0.66	0.69	0.68	0.76	0.83	0.90	0.98	0.89	0.80	0.73	0.60
9/19/2014	0.51	0.45	0.46	0.42	0.42	0.49	0.65	0.70	0.65	0.56	0.56	0.59	0.63	0.67	0.63	0.72	0.74	0.78	0.80	0.82	0.83	0.78	0.71	0.61
9/20/2014	0.52	0.45	0.44	0.42	0.42	0.44	0.52	0.65	0.73	0.83	0.80	0.88	0.83	0.82	0.80	0.70	0.80	0.79	0.85	0.90	0.86	0.79	0.68	0.60
9/21/2014	0.51	0.45	0.42	0.42	0.43	0.44	0.46	0.59	0.72	0.77	0.86	0.80	0.90	0.90	0.89	0.90	1.02	1.05	1.09	1.08	1.04	0.91	0.82	0.68
9/22/2014	0.60	0.55	0.51	0.49	0.49	0.52	0.64	0.65	0.68	0.68	0.71	0.69	0.72	0.73	0.74	0.80	0.78	0.87	0.89	0.91	0.87	0.85	0.68	0.55
9/23/2014	0.48	0.45	0.43	0.42	0.44	0.46	0.63	0.60	0.62	0.61	0.63	0.61	0.65	0.62	0.66	0.68	0.70	0.76	0.93	0.90	0.86	0.83	0.70	0.53
9/24/2014	0.43	0.39	0.40	0.38	0.39	0.45	0.60	0.62	0.57	0.55	0.56	0.55	0.55	0.54	0.56	0.60	0.69	0.84	0.89	0.95	0.85	0.77	0.64	0.57
9/25/2014	0.45	0.41	0.40	0.38	0.39	0.46	0.63	0.62	0.67	0.68	0.71	0.66	0.69	0.66	0.68	0.71	0.82	0.90	0.93	1.05	0.88	0.78	0.67	0.53
9/26/2014	0.45	0.40	0.41	0.37	0.39	0.44	0.62	0.63	0.61	0.58	0.54	0.61	0.59	0.61	0.61	0.61	0.71	0.78	0.80	0.83	0.83	0.82	0.76	0.59
9/27/2014	0.47	0.42	0.40	0.40	0.41	0.41	0.50	0.65	0.70	0.76	0.74	0.78	0.84	0.87	0.86	0.94	0.99	1.02	1.03	1.00	0.94	0.83	0.80	0.69
9/28/2014	0.55	0.47	0.43	0.45	0.43	0.43	0.49	0.60	0.72	0.86	0.83	0.89	0.89	0.97	1.07	1.03	1.11	1.10	1.17	1.18	1.10	0.93	0.84	0.68
9/29/2014	0.53	0.49	0.48	0.47	0.46	0.52	0.69	0.68	0.69	0.69	0.69	0.68	0.66	0.66	0.72	0.74	0.83	0.92	1.00	1.01	0.97	0.94	0.72	0.57
9/30/2014	0.49	0.47	0.43	0.43	0.44	0.52	0.64	0.70	0.63	0.63	0.66	0.68	0.71	0.68	0.69	0.69	0.79	0.88	0.90	0.92	0.85	0.81	0.64	0.54
10/1/2014	0.48	0.42	0.40	0.38	0.44	0.49	0.58	0.62	0.68	0.66	0.63	0.66	0.69	0.64	0.57	0.60	0.74	0.83	0.87	0.90	0.96	0.83	0.71	0.56
10/2/2014	0.47	0.43	0.39	0.38	0.40	0.45	0.58	0.64	0.68	0.59	0.58	0.63	0.60	0.56	0.64	0.71	0.74	0.79	0.92	0.87	0.85	0.97	0.83	0.57
10/3/2014	0.43	0.42	0.39	0.39	0.38	0.44	0.60	0.62	0.56	0.55	0.55	0.67	0.73	0.71	0.72	0.63	0.67	0.74	0.82	0.86	0.98	0.89	0.76	0.62
10/4/2014	0.49	0.45	0.40	0.38	0.39	0.39	0.45	0.59	0.79	0.87	0.83	0.88	0.84	0.85	0.81	0.82	0.90	0.92	0.84	0.79	0.80	0.72	0.70	0.59
10/5/2014	0.54	0.45	0.42	0.41	0.40	0.42	0.48	0.57	0.75	0.82	0.80	0.76	0.90	0.79	0.81	0.73	0.77	0.83	0.91	0.97	0.86	0.86	0.66	0.60
10/6/2014	0.50	0.42	0.40	0.37	0.41	0.50	0.69	0.69	0.66	0.65	0.65	0.67	0.57	0.59	0.65	0.64	0.73	0.81	0.86	0.91	0.89	0.89	0.67	0.57
10/7/2014	0.44	0.42	0.39	0.37	0.40	0.44	0.53	0.69	0.59	0.57	0.54	0.56	0.59	0.53	0.52	0.60	0.63	0.80	0.86	0.89	0.80	0.78	0.68	0.53
10/8/2014	0.46	0.40	0.37	0.36	0.39	0.44	0.57	0.62	0.59	0.63	0.65	0.67	0.58	0.58	0.54	0.61	0.66	0.76	0.85	0.88	0.86	0.82	0.71	0.54
10/9/2014	0.45	0.41	0.38	0.37	0.39	0.42	0.55	0.64	0.64	0.64	0.57	0.58	0.51	0.54	0.48	0.56	0.67	0.75	0.94	0.87	0.81	0.72	0.64	0.53
10/10/2014	0.45	0.42	0.40	0.41	0.40	0.44	0.58	0.68	0.68	0.58	0.59	0.55	0.55	0.49	0.51	0.57	0.58	0.68	0.74	0.77	0.78	0.79	0.68	0.62
10/11/2014	0.51	0.44	0.42	0.40	0.40	0.42	0.47	0.63	0.74	0.85	0.92	0.94	0.94	0.84	0.78	0.74	0.76	0.74	0.83	0.86	0.94	0.82	0.70	0.60
10/12/2014	0.55	0.49	0.46	0.44	0.44	0.49	0.54	0.67	0.68	0.79	0.82	0.79	0.79	0.84	0.71	0.69	0.63	0.79	0.78	0.83	0.82	0.74	0.72	0.56
10/13/2014	0.49	0.45	0.44	0.42	0.44	0.52	0.56	0.62	0.73	0.79	0.79	0.75	0.75	0.66	0.63	0.70	0.77	0.83	0.95	0.88	0.87	0.84	0.71	0.55
10/14/2014	0.45	0.42	0.41	0.41	0.40	0.44	0.54	0.62	0.59	0.55	0.60	0.61	0.58	0.60	0.54	0.67	0.75	0.83	0.85	0.91	0.97	0.87	0.77	0.58
10/15/2014	0.49	0.41	0.41	0.44	0.44	0.43	0.52	0.57	0.62	0.56	0.56	0.56	0.61	0.63	0.60	0.64	0.82	0.88	0.99	1.06	1.02	0.93	0.77	0.79
10/16/2014	0.62	0.50	0.45	0.44	0.47	0.53	0.64	0.67	0.73	0.75	0.84	0.91	0.86	0.98	0.90	0.93	1.06	1.24	1.42	1.44	1.37	1.28	0.98	0.78
10/17/2014	0.68	0.61	0.59	0.56	0.55	0.66	0.76	0.91	1.04	0.92	0.84	1.01	1.00	0.82	0.88	0.99	1.00	0.99	1.08	1.14	1.19	1.17	0.94	0.82
10/18/2014	0.53	0.49	0.43	0.41	0.43	0.44	0.49	0.57	0.70	0.72	0.73	0.80	0.76	0.73	0.75	0.84	0.88	0.88	1.01	0.86	0.80	0.74	0.72	0.64
10/19/2014	0.54	0.44	0.41	0.38	0.39	0.39	0.43	0.47	0.66	0.82	0.77	0.79	0.87	0.83	0.82	0.81	0.83	0.91	0.90	0.96	0.94	0.87	0.73	0.61
10/20/2014	0.49	0.43	0.40	0.42	0.42	0.54	0.69	0.74	0.76	0.70	0.74	0.72	0.63	0.56	0.62	0.66	0.74	0.87	1.00	1.04	0.94	0.90	0.68	0.55
10/21/2014	0.47	0.45	0.43	0.41	0.44	0.49	0.58	0.68	0.61	0.59	0.57	0.58	0.58	0.54	0.63	0.62	0.69	0.82	0.88	0.87	0.90	0.75	0.69	0.56
10/22/2014	0.48	0.43	0.36	0.37	0.39	0.43	0.63	0.70	0.57	0.57	0.62	0.66	0.65	0.63	0.59	0.68	0.75	0.86	0.96	0.98	0.94	0.84	0.81	0.65
10/23/2014	0.49	0.44	0.40	0.42	0.43	0.45	0.56	0.65	0.63	0.63	0.64	0.59	0.59	0.61	0.56	0.67	0.80	0.95	1.07	1.08	0.91	0.84	0.73	0.58
10/24/2014	0.49	0.43	0.40	0.41	0.46	0.50	0.59	0.68	0.68	0.60	0.52	0.63	0.62	0.65	0.64	0.65	0.73	0.80	0.87	0.79	0.82	0.87	0.73	0.67
10/25/2014	0.55	0.47	0.44	0.48	0.46	0.48	0.55	0.60	0.75	0.78	0.79	0.79	0.73	0.78	0.74	0.71	0.76	0.78	0.91	0.92	0.85	0.76	0.65	0.57

10/26/2014	0.52	0.45	0.42	0.41	0.40	0.42	0.46	0.58	0.74	0.75	0.75	0.78	0.86	0.83	0.85	0.73	0.68	0.85	0.91	0.92	0.84	0.77	0.69	0.56
10/27/2014	0.48	0.42	0.41	0.40	0.42	0.48	0.63	0.72	0.67	0.65	0.64	0.66	0.63	0.59	0.58	0.64	0.72	0.85	0.98	0.92	0.89	0.85	0.72	0.57
10/28/2014	0.48	0.46	0.41	0.41	0.41	0.49	0.63	0.71	0.63	0.63	0.58	0.63	0.54	0.56	0.59	0.62	0.66	0.76	0.85	0.84	0.75	0.75	0.67	0.49
10/29/2014	0.48	0.39	0.36	0.35	0.37	0.42	0.57	0.63	0.55	0.50	0.52	0.54	0.53	0.52	0.48	0.53	0.56	0.74	0.85	0.89	0.80	0.72	0.59	0.50
10/30/2014	0.44	0.37	0.37	0.36	0.37	0.44	0.52	0.66	0.64	0.59	0.56	0.59	0.62	0.53	0.53	0.68	0.66	0.75	1.00	0.95	0.84	0.88	0.79	0.59
10/31/2014	0.52	0.48	0.41	0.43	0.43	0.52	0.66	0.70	0.66	0.66	0.62	0.72	0.67	0.68	0.59	0.57	0.77	0.79	0.77	0.82	0.82	0.74	0.68	0.60
11/1/2014	0.51	0.45	0.42	0.41	0.42	0.44	0.49	0.59	0.73	0.82	0.84	0.84	0.84	0.90	0.95	0.94	0.94	0.98	1.05	0.95	0.92	0.87	0.80	0.68
11/2/2014	0.60	0.52	0.48	0.47	0.50	0.54	0.62	0.77	0.93	1.04	1.02	1.00	1.05	1.03	1.04	1.02	1.05	1.07	1.11	1.01	1.00	0.91	0.75	0.64
11/3/2014	0.58	0.55	0.54	0.52	0.55	0.66	0.77	0.85	0.84	0.79	0.76	0.67	0.65	0.63	0.64	0.68	0.86	0.99	0.99	0.99	0.96	0.86	0.68	0.57
11/4/2014	0.49	0.46	0.42	0.45	0.45	0.53	0.64	0.68	0.69	0.63	0.60	0.57	0.57	0.55	0.57	0.59	0.78	0.89	0.92	0.86	0.80	0.73	0.62	0.50
11/5/2014	0.44	0.42	0.40	0.37	0.42	0.47	0.58	0.61	0.63	0.55	0.56	0.58	0.52	0.54	0.53	0.54	0.68	0.83	0.90	0.81	0.81	0.78	0.66	0.58
11/6/2014	0.48	0.40	0.39	0.40	0.41	0.47	0.61	0.66	0.66	0.69	0.68	0.69	0.70	0.69	0.61	0.68	0.88	1.00	1.03	0.98	0.91	0.77	0.64	0.56
11/7/2014	0.46	0.43	0.42	0.42	0.42	0.49	0.59	0.65	0.69	0.64	0.58	0.61	0.57	0.57	0.58	0.66	0.83	0.92	0.97	0.94	0.89	0.93	0.82	0.71
11/8/2014	0.59	0.52	0.51	0.52	0.53	0.56	0.65	0.74	0.84	0.85	0.86	0.88	0.84	0.80	0.74	0.74	0.85	0.94	0.91	0.90	0.92	0.90	0.75	0.63
11/9/2014	0.57	0.52	0.50	0.49	0.49	0.49	0.54	0.68	0.83	0.76	0.78	0.79	0.83	0.77	0.83	0.82	0.87	0.97	1.04	0.99	0.95	0.87	0.74	0.60
11/10/2014	0.53	0.50	0.49	0.46	0.50	0.57	0.72	0.75	0.76	0.72	0.61	0.58	0.59	0.58	0.59	0.71	0.84	0.96	0.97	0.88	0.81	0.79	0.70	0.56
11/11/2014	0.50	0.46	0.46	0.46	0.46	0.52	0.61	0.67	0.75	0.68	0.73	0.66	0.66	0.62	0.60	0.66	0.80	0.96	0.91	0.85	0.86	0.83	0.64	0.55
11/12/2014	0.47	0.43	0.43	0.42	0.44	0.52	0.61	0.68	0.63	0.59	0.62	0.64	0.61	0.62	0.60	0.57	0.73	0.89	0.93	0.93	0.91	0.78	0.66	0.57
11/13/2014	0.49	0.45	0.42	0.45	0.45	0.54	0.68	0.73	0.71	0.67	0.62	0.66	0.59	0.59	0.59	0.62	0.88	0.98	1.00	0.97	0.91	0.84	0.69	0.59
11/14/2014	0.51	0.47	0.49	0.48	0.52	0.59	0.75	0.76	0.78	0.75	0.71	0.64	0.62	0.64	0.65	0.69	0.82	0.98	1.05	0.95	0.94	0.87	0.86	0.75
11/15/2014	0.62	0.61	0.59	0.57	0.59	0.63	0.67	0.83	0.92	0.90	0.90	0.87	0.93	0.85	0.81	0.85	0.94	1.03	1.03	0.97	1.05	0.97	0.94	0.81
11/16/2014	0.68	0.60	0.61	0.62	0.63	0.66	0.71	0.84	0.95	1.04	1.01	0.94	0.97	0.95	0.99	0.90	1.01	1.11	1.14	1.07	1.04	0.97	0.80	0.64
11/17/2014	0.61	0.56	0.52	0.51	0.53	0.59	0.73	0.81	0.83	0.78	0.72	0.74	0.77	0.72	0.73	0.83	0.97	1.04	1.08	1.03	0.99	0.90	0.80	0.61
11/18/2014	0.50	0.50	0.48	0.48	0.48	0.56	0.69	0.76	0.75	0.72	0.67	0.62	0.69	0.66	0.71	0.72	0.91	1.02	1.14	1.08	1.09	1.03	0.88	0.77
11/19/2014	0.69	0.70	0.66	0.67	0.70	0.78	0.89	0.96	0.92	0.82	0.79	0.78	0.79	0.70	0.67	0.73	0.95	1.16	1.18	1.18	1.22	1.04	0.88	0.77
11/20/2014	0.66	0.63	0.61	0.59	0.62	0.65	0.77	0.84	0.84	0.81	0.68	0.69	0.74	0.72	0.66	0.77	0.87	1.05	1.14	1.06	0.98	0.91	0.82	0.72
11/21/2014	0.64	0.61	0.60	0.60	0.65	0.69	0.91	0.92	0.89	0.83	0.81	0.76	0.81	0.75	0.78	0.83	0.98	1.11	1.18	1.12	1.10	0.98	0.94	0.85
11/22/2014	0.74	0.69	0.67	0.68	0.70	0.71	0.82	0.96	0.99	0.96	0.92	0.86	0.89	0.88	0.88	0.95	1.00	1.07	1.06	1.06	0.98	0.97	0.86	0.72
11/23/2014	0.60	0.54	0.53	0.53	0.52	0.56	0.63	0.71	0.83	0.83	0.85	0.81	0.80	0.86	0.82	0.85	1.00	1.14	1.09	1.14	1.02	0.86	0.77	0.62
11/24/2014	0.53	0.49	0.49	0.46	0.49	0.59	0.65	0.75	0.72	0.73	0.70	0.71	0.66	0.58	0.63	0.60	0.77	0.91	0.89	0.91	0.85	0.75	0.69	0.52
11/25/2014	0.48	0.41	0.40	0.38	0.40	0.45	0.58	0.66	0.62	0.56	0.55	0.56	0.54	0.52	0.60	0.64	0.83	0.94	0.95	0.94	0.93	0.84	0.72	0.60
11/26/2014	0.52	0.44	0.42	0.41	0.43	0.55	0.62	0.72	0.73	0.65	0.69	0.77	0.84	0.86	0.85	0.97	1.12	1.18	1.20	1.14	1.12	1.05	0.91	0.77
11/27/2014	0.65	0.59	0.58	0.56	0.55	0.61	0.72	0.86	1.04	1.12	1.20	1.27	1.07	0.92	0.85	0.84	0.89	0.88	0.93	0.91	0.94	0.96	0.77	0.71
11/28/2014	0.60	0.56	0.55	0.55	0.56	0.62	0.68	0.73	0.86	0.82	0.81	0.87	0.88	0.86	0.85	0.97	1.03	1.06	1.10	1.08	1.03	0.94	0.90	0.83
11/29/2014	0.73	0.68	0.65	0.65	0.68	0.70	0.80	0.87	0.99	0.95	0.87	0.88	0.84	0.86	0.83	0.87	1.02	1.01	1.08	1.05	1.03	0.95	0.93	0.83
11/30/2014	0.68	0.61	0.59	0.55	0.57	0.60	0.63	0.70	0.71	0.77	0.85	0.85	0.76	0.75	0.76	0.85	0.90	0.96	0.99	0.98	0.93	0.83	0.67	0.56
12/1/2014	0.48	0.44	0.42	0.42	0.44	0.49	0.62	0.66	0.66	0.58	0.63	0.60	0.55	0.57	0.59	0.65	0.77	0.91	0.96	0.96	0.96	0.82	0.72	0.60
12/2/2014	0.49	0.44	0.46	0.46	0.47	0.55	0.68	0.78	0.81	0.77	0.65	0.70	0.72	0.74	0.70	0.81	0.95	1.17	1.19	1.05	1.07	0.99	0.81	0.67
12/3/2014	0.57	0.52	0.52	0.52	0.52	0.58	0.73	0.79	0.75	0.68	0.66	0.69	0.64	0.62	0.63	0.71	0.98	1.05	1.10	1.07	1.02	0.94	0.82	0.66
12/4/2014	0.56	0.53	0.50	0.51	0.54	0.63	0.75	0.85	0.86	0.79	0.71	0.72	0.74	0.69	0.67	0.69	0.86	1.07	1.07	1.15	1.13	0.97	0.87	0.75
12/5/2014	0.66	0.61	0.60	0.59	0.62	0.68	0.83	0.90	0.89	0.82	0.75	0.77	0.68	0.66	0.71	0.76	0.96	1.08	1.02	1.01	0.98	0.88	0.79	0.71
12/6/2014	0.63	0.54	0.53	0.52	0.51	0.54	0.57	0.68	0.81	0.88	0.91	1.07	0.91	0.90	0.88	0.97	0.97	1.02	1.03	0.96	0.94	0.91	0.80	0.71
12/7/2014	0.64	0.57	0.54	0.54	0.56	0.58	0.63	0.72	0.84	0.96	0.95	0.93	1.00	0.97	0.86	0.92	1.04	1.21	1.23	1.21	1.27	1.13	1.04	0.87
12/8/2014	0.75	0.68	0.66	0.67	0.72	0.78	0.97	1.01	0.97	0.93	0.89	0.89	0.89	0.79	0.80	0.94	1.09	1.28	1.32	1.19	1.16	1.16	0.98	0.77
12/9/2014	0.68	0.65	0.63	0.60	0.61	0.68	0.84	0.91	0.85	0.81	0.82	0.85	0.89	0.82	0.89	0.88	0.99	1.16	1.11	1.04	0.95	0.89	0.81	0.64
12/10/2014	0.53	0.48	0.47	0.48	0.51	0.57	0.69	0.82	0.76	0.72	0.74	0.86	0.76	0.76	0.73	0.80	0.97	1.07	1.05	1.05	1.09	0.96	0.82	0.71
12/11/2014	0.60	0.57	0.54	0.55	0.54	0.62	0.76	0.88	0.85	0.77	0.75	0.74	0.75	0.75	0.77	0.84	0.99	1.13	1.16	1.14	1.11	1.05	0.90	0.78
12/12/2014	0.66	0.61	0.61	0.62	0.63	0.67	0.83	0.96	0.84	0.74	0.73	0.74	0.68	0.70	0.78	0.79	0.98	1.11	1.19	1.13	1.10	1.03	0.95	0.83
12/13/2014	0.68	0.64	0.61	0.62	0.60	0.65	0.71	0.83	1.00	0.90	0.96	1.02	0.96	0.93	0.97	1.04	1.03	1.17	1.02	1.03	1.01	0.98	0.87	0.75
12/14/2014	0.63	0.63	0.60	0.59	0.58	0.61	0.67	0.78	0.92	0.92	0.91	0.90	0.96	0.98	0.95	0.99	1.11	1.18	1.16	1.13	1.14	1.00	0.89	0.75
12/15/2014	0.61	0.56	0.55	0.55	0.58	0.67	0.83	0.93	0.86	0.78	0.76	0.72	0.68	0.68	0.70	0.78	1.04	1.14	1.17	1.12	1.09	0.98	0.84	0.74
12/16/2014	0.63	0.58	0.58	0.55	0.58	0.64	0.80	0.91	0.81	0.74	0.74	0.80	0.74	0.67	0.78	0.77	1.00	1.12	1.12	1.10	1.07	1.01	0.83	0.65
12/17/2014	0.57	0.52	0.50	0.53	0.51	0.58	0.72	0.79	0.76	0.65	0.67	0.70	0.65	0.68	0.67	0.73	0.97	1.13	1.11	1.11	1.08	1.01	0.79	0.66
12/18/2014	0.56	0.48	0.49	0.48	0.52	0.60	0.74	0.87	0.84	0.81	0.71	0.68	0.67	0.67	0.68	0.75	0.88	1.03	1.14	1.13	1.07	1.05	0.90	0.74
12/19/2014	0.61	0.60	0.56	0.53	0.53	0.61	0.78	0.84	0.84	0.79	0.74	0.82	0.77	0.86	0.85	0.89	1.00	1.04	1.17	1.11	1.06	1.00	0.89	0.82
12/20/2014	0.69	0.60	0.60	0.61	0.60	0.63	0.70	0.81	0.94	0.98	0.97	1.04	1.04	1.00	1.00	1.08	1.18	1.26	1.13	1.14	1.08	1.08	0.94	0.86
12/21/2014	0.78	0.67	0.64	0.63	0.64	0.63	0.69	0.81	0.98	1.01	1.01	1.03	1.07	1.09	1.04	1.04	1.02	1.20	1.24	1.18	1.13	1.09	0.95	0.77
12/22/2014	0.65	0.58	0.54	0.56	0.60	0.64	0.81	0.87	0.87	0.73	0.69	0.72	0.76	0.76	0.75	0.82	1.06	1.17	1.22	1.22	1.15	1.06	0.89	0.76
12/23/2014	0.59	0.51	0.51	0.51	0.55	0.56	0.69	0.79	0.77	0.83	0.81	0.81	0.80	0.74	0.80	0.90	1.04	1.14	1.07	1.08	1.08	1.11	0.89	0.73
12/24/2014	0.61	0.52	0.48	0.48	0.49	0.54	0.62	0.72	0.83	0.88	0.91	0.95	0.96	0.96	1.11	1.12	1.20	1.11	1.03	0.98	0.98	0.96	0.84	0.74
12/25/2014	0.62	0.52	0.47	0.47	0.44	0.45	0.51	0.62	0.83	0.88	0.97	1.01	0.97	0.85	0.82	0.83	0.85	0.87	0.87	0.94	1.06	0.95	0.81	0.69
12/26/2014	0.59	0.51	0.49	0.49	0.50	0.58	0.62	0.72	0.82	0.81	0.84	0.87	0.81	0.74	0.73	0.77	0.94	1.04	1.04	1.03	1.04	0.90	0.84	0.71
12/27/2014	0.63	0.54	0.54	0.54	0.55	0.57	0.62	0.74	0.84	0.86	0.86	0.92	0.89	0.82	0.89	0.93	0.99	1.07	1.12	1.05	0.97	0.98	0.88	0.70
12/28/2014	0.65	0.57	0.53	0.50	0.52	0.53	0.55	0.64	0.81	0.91	0.89	0.92	0.86	0.88	0.95	0.96	0.96	1.08	1.05	0.98	0.98	0.94	0.81	0.62
12/29/2014	0.57	0.49	0.48	0.49	0.50	0.57	0.66	0.76	0.83	0.80	0.75	0.74	0.79	0.79	0.77	0.89	1.10	1.24	1.21	1.16	1.16	1.05	0.85	0.72
12/30/2014	0.60	0.59	0.57	0.58	0.61	0.64	0.75	0.85	0.85	0.90	0.86	0.89	0.88	0.82	0.88	0.84	0.96	1.22	1.21	1.21	1.12	0.97	0.94	0.83
12/31/2014	0.70	0.65	0.62	0.62	0.64	0.70	0.78	0.81	0.96	0.92	0.92	0.88	0.93	0.92	0.94	0.96	1.10	1.15	1.17	1.14	1.08	1.01	0.97	0.84
1/1/2015	0.82	0.74	0.70	0.69	0.70	0.71	0.74	0.78	0.89	0.92	1.04	1.13	1.07	0.97	0.96	1.04	1.08	1.19	1.23	1.23	1.11	1.06	0.94	0.81
1/2/2015	0.69	0.64	0.59	0.59	0.60	0.63	0.70	0.81	0.83	0.92	0.84	0.83	0.80	0.81	0.79	0.90	0.93	1.10	1.18	1.19	1.11	1.04	0.98	0.81
1/3/2015	0.74	0.64	0.58	0.58	0.59	0.64	0.69	0.77	0.86	0.91	0.97	0.96	0.95	0.96	0.99	1.09	1.23	1.19	1.17	1.08	1.01	0.95	0.82	0.75
1/4/2015	0.65	0.61	0.56	0.56	0.55	0.56	0.56	0.73	0.86	0.88	0.97	0.96	1.01	1.01	0.99	0.97	1.04	1.17	1.07	0.97	0.95	0.88	0.78	0.60
1/5/2015	0.54	0.51	0.48	0.47	0.49	0.54	0.75	0.79	0.75	0.70	0.72	0.74	0.80	0.75	0.70	0.79	0.96	1.18	1.18	1.17	1.15	1.09	0.97	0.82
1/6/2015	0.76	0.71	0.68	0.70	0.71	0.78	0.92	1.00	0.89	0.88	0.85	0.91	0.87	0.87	0.88	0.93	1.03	1.21	1.26	1.27	1.22	1.14	0.96	0.88
1/7/2015	0.76	0.74	0.73	0.73	0.72	0.79	0.90	0.97	1.00	0.94	0.89	0.89	0.88	0.89	0.89	0.89	1.08	1.35	1.35	1.35	1.34	1.26	1.17	1.06

1/8/2015	0.99	0.96	0.93	0.93	0.94	0.98	1.08	1.19	1.18	1.08	1.04	1.01	1.01	0.98	0.94	0.98	1.20	1.36	1.35	1.28	1.25	1.21	1.06	0.89
1/9/2015	0.78	0.76	0.73	0.72	0.73	0.80	0.90	0.94	0.94	0.95	0.91	0.91	0.99	0.86	0.89	0.86	1.00	1.19	1.18	1.15	1.16	1.11	0.93	0.86
1/10/2015	0.74	0.71	0.72	0.74	0.73	0.74	0.83	0.96	1.05	1.15	1.10	1.05	1.19	1.10	1.03	1.14	1.19	1.25	1.19	1.10	1.14	1.04	0.96	0.90
1/11/2015	0.79	0.76	0.77	0.75	0.76	0.76	0.83	0.92	1.10	1.11	1.09	1.11	1.05	1.08	1.14	1.15	1.26	1.26	1.30	1.23	1.17	1.11	1.00	0.80
1/12/2015	0.67	0.62	0.58	0.58	0.59	0.65	0.77	0.84	0.86	0.79	0.83	0.88	0.86	0.79	0.84	0.88	0.98	1.11	1.04	1.14	1.03	1.03	0.83	0.69
1/13/2015	0.63	0.59	0.57	0.58	0.63	0.67	0.81	0.95	0.85	0.80	0.85	0.82	0.79	0.79	0.79	0.83	0.99	1.18	1.21	1.19	1.20	1.08	0.96	0.84
1/14/2015	0.75	0.74	0.73	0.72	0.73	0.80	0.93	0.98	0.95	0.88	0.87	0.85	0.87	0.86	0.85	0.87	0.95	1.24	1.28	1.31	1.18	1.04	0.87	0.76
1/15/2015	0.75	0.67	0.64	0.66	0.71	0.73	0.79	0.90	0.98	0.82	0.81	0.85	0.81	0.84	0.84	0.89	0.93	1.20	1.16	1.14	1.12	1.02	0.89	0.73
1/16/2015	0.67	0.66	0.68	0.68	0.67	0.74	0.86	0.93	0.94	0.91	0.88	0.72	0.73	0.80	0.83	0.88	0.96	1.16	1.14	1.16	1.15	1.05	0.96	0.88
1/17/2015	0.79	0.73	0.75	0.70	0.73	0.78	0.87	1.00	1.14	1.12	1.12	1.09	1.15	1.08	1.07	1.10	1.14	1.20	1.21	1.16	1.15	1.12	0.93	0.82
1/18/2015	0.72	0.70	0.68	0.68	0.68	0.68	0.68	0.80	0.98	0.90	0.92	0.91	0.93	1.03	1.02	0.92	0.98	1.13	1.10	0.98	1.01	0.84	0.78	0.71
1/19/2015	0.59	0.52	0.49	0.52	0.52	0.57	0.62	0.75	0.79	0.87	0.88	0.89	0.90	0.89	0.93	0.82	0.96	1.10	1.19	1.16	1.07	1.02	0.80	0.74
1/20/2015	0.62	0.62	0.61	0.60	0.65	0.71	0.79	0.91	0.88	0.80	0.79	0.80	0.70	0.70	0.79	0.79	0.87	1.06	1.11	1.09	1.03	0.87	0.82	0.73
1/21/2015	0.64	0.64	0.61	0.64	0.70	0.76	0.88	0.90	0.91	0.87	0.90	0.83	0.82	0.82	0.77	0.79	0.89	1.08	1.19	1.17	1.19	1.07	0.89	0.71
1/22/2015	0.66	0.63	0.61	0.63	0.68	0.69	0.78	0.86	0.83	0.70	0.74	0.77	0.75	0.70	0.74	0.76	0.87	1.01	1.14	1.17	0.99	0.95	0.85	0.76
1/23/2015	0.66	0.64	0.63	0.62	0.64	0.71	0.89	0.97	0.88	0.83	0.79	0.80	0.82	0.81	0.70	0.77	0.89	0.99	1.05	1.05	0.99	0.91	0.81	0.74
1/24/2015	0.66	0.63	0.59	0.58	0.62	0.64	0.71	0.77	0.88	0.96	0.97	0.98	0.98	1.03	1.10	1.04	1.10	1.25	1.15	1.17	1.01	1.01	0.94	0.81
1/25/2015	0.72	0.65	0.63	0.62	0.60	0.64	0.70	0.79	0.90	0.93	0.94	0.95	0.85	0.79	0.87	0.85	1.09	1.14	1.16	1.25	1.20	1.04	0.89	0.80
1/26/2015	0.70	0.65	0.64	0.64	0.67	0.76	0.91	0.98	0.94	0.92	0.95	0.92	0.96	0.89	0.98	1.08	1.15	1.38	1.31	1.33	1.28	1.16	1.10	0.92
1/27/2015	0.81	0.77	0.77	0.76	0.78	0.79	0.88	0.92	1.04	1.09	1.10	1.18	1.25	1.19	1.12	1.09	1.17	1.42	1.40	1.25	1.20	1.11	0.98	0.85
1/28/2015	0.80	0.78	0.78	0.76	0.81	0.89	1.00	0.97	1.01	1.05	1.08	1.17	1.09	1.04	0.98	0.94	1.06	1.22	1.30	1.25	1.16	1.16	1.03	0.92
1/29/2015	0.81	0.78	0.78	0.78	0.80	0.87	0.97	1.05	0.97	0.91	0.92	0.83	0.79	0.83	0.78	0.73	0.82	1.08	1.20	1.10	1.08	1.06	0.89	0.74
1/30/2015	0.67	0.64	0.60	0.62	0.61	0.68	0.79	0.88	0.81	0.75	0.79	0.78	0.84	0.87	0.91	0.97	0.94	1.08	1.05	1.07	1.10	1.07	0.95	0.85
1/31/2015	0.76	0.75	0.75	0.75	0.77	0.82	0.85	0.97	1.08	1.08	1.16	1.13	1.15	1.06	1.01	1.07	1.17	1.21	1.21	1.17	1.09	1.09	1.04	0.90
2/1/2015	0.94	0.93	0.87	0.83	0.87	0.88	0.89	0.98	1.15	1.15	1.19	1.12	1.16	1.02	0.97	1.05	1.14	1.26	1.21	1.12	1.06	1.03	0.94	0.92
2/2/2015	0.79	0.74	0.75	0.71	0.74	0.81	0.88	0.99	1.01	1.09	1.17	1.21	1.11	1.15	1.11	1.16	1.25	1.33	1.49	1.48	1.29	1.20	1.01	0.93
2/3/2015	0.89	0.87	0.84	0.83	0.91	0.95	1.09	1.11	1.06	0.99	1.01	0.95	0.94	0.84	0.84	0.89	1.02	1.24	1.26	1.26	1.18	1.16	1.10	0.95
2/4/2015	0.84	0.83	0.82	0.84	0.82	0.94	1.02	1.06	0.99	0.95	0.87	0.85	0.86	0.85	0.84	0.84	0.98	1.19	1.31	1.25	1.15	1.08	0.89	0.74
2/5/2015	0.66	0.66	0.66	0.65	0.67	0.74	0.89	0.88	0.83	0.84	0.79	0.88	0.90	0.95	0.94	0.95	1.07	1.28	1.32	1.36	1.36	1.24	1.08	0.94
2/6/2015	0.85	0.88	0.86	0.83	0.90	0.99	1.11	1.08	1.03	1.06	0.98	0.97	0.96	0.85	0.94	0.97	0.95	1.23	1.27	1.15	1.20	1.11	1.10	0.96
2/7/2015	0.87	0.87	0.86	0.81	0.85	0.84	0.88	1.00	1.02	1.03	1.05	1.06	1.07	1.16	1.07	1.03	1.09	1.27	1.11	1.14	1.05	1.02	0.91	0.75
2/8/2015	0.69	0.65	0.63	0.63	0.64	0.70	0.73	0.82	0.97	1.05	1.03	1.03	1.23	1.17	1.12	1.12	1.14	1.38	1.34	1.32	1.22	1.13	1.06	0.91
2/9/2015	0.81	0.78	0.74	0.76	0.78	0.85	0.95	1.00	1.05	1.06	1.17	1.17	1.16	1.17	1.13	1.18	1.28	1.38	1.43	1.32	1.38	1.20	1.01	0.85
2/10/2015	0.78	0.74	0.75	0.74	0.77	0.84	0.97	1.04	1.02	0.98	0.99	0.94	0.89	0.86	0.89	0.86	0.91	1.12	1.24	1.19	1.18	1.15	1.04	0.84
2/11/2015	0.78	0.70	0.68	0.70	0.72	0.81	0.96	1.06	1.00	0.91	0.87	0.94	0.89	0.99	0.88	0.88	1.04	1.22	1.29	1.28	1.25	1.12	0.97	0.85
2/12/2015	0.84	0.72	0.74	0.76	0.78	0.85	0.99	1.03	0.98	0.95	0.95	0.98	0.95	0.89	0.90	0.94	0.97	1.29	1.23	1.25	1.13	1.07	0.94	0.86
2/13/2015	0.80	0.79	0.76	0.78	0.81	0.91	1.03	1.05	1.07	1.01	0.95	0.92	0.95	0.84	0.88	0.91	0.94	1.13	1.24	1.21	1.23	1.24	1.11	1.04
2/14/2015	0.95	0.89	0.87	0.88	0.87	0.91	0.99	1.11	1.19	1.23	1.10	1.11	1.14	1.11	1.09	1.21	1.18	1.21	1.20	1.14	1.09	1.03	0.97	0.86
2/15/2015	0.82	0.76	0.75	0.73	0.75	0.77	0.85	0.91	1.01	1.15	1.23	1.20	1.18	1.14	1.18	1.15	1.16	1.37	1.37	1.39	1.43	1.37	1.20	1.10
2/16/2015	1.00	0.99	0.99	1.01	1.02	1.05	1.13	1.17	1.16	1.22	1.19	1.10	1.15	1.04	0.96	1.05	1.26	1.43	1.39	1.33	1.37	1.19	1.07	0.93
2/17/2015	0.90	0.85	0.84	0.83	0.84	0.91	1.01	1.08	1.02	1.05	1.11	1.07	1.02	0.95	0.96	1.02	1.01	1.18	1.31	1.25	1.19	1.12	1.04	0.90
2/18/2015	0.77	0.75	0.75	0.74	0.75	0.82	0.92	0.97	0.92	0.78	0.94	0.93	0.85	0.81	0.87	0.86	0.99	1.11	1.15	1.15	1.21	1.15	1.01	0.85
2/19/2015	0.74	0.65	0.65	0.66	0.66	0.75	0.85	0.94	0.87	0.85	0.89	0.91	0.90	0.85	0.86	0.86	0.96	1.15	1.29	1.26	1.35	1.20	1.04	0.97
2/20/2015	0.90	0.89	0.90	0.90	0.91	0.98	1.11	1.16	1.10	1.09	1.07	1.04	1.07	1.00	0.98	0.95	1.09	1.15	1.21	1.24	1.24	1.19	1.18	1.03
2/21/2015	0.93	0.91	0.94	0.91	0.94	0.97	1.05	1.16	1.24	1.08	1.10	1.12	1.20	1.12	1.19	1.20	1.20	1.25	1.26	1.24	1.10	1.06	0.93	0.83
2/22/2015	0.73	0.72	0.70	0.67	0.68	0.70	0.76	0.86	0.95	1.02	1.13	1.10	1.07	0.99	0.97	1.04	1.18	1.12	1.15	1.12	1.10	1.07	0.91	0.76
2/23/2015	0.71	0.65	0.63	0.67	0.69	0.75	0.84	0.83	0.81	0.88	0.92	0.91	0.89	0.83	0.91	0.83	1.01	1.16	1.31	1.33	1.29	1.21	1.06	1.03
2/24/2015	0.93	0.94	0.95	0.94	0.99	1.05	1.16	1.22	1.12	1.06	1.00	0.95	0.94	0.90	0.83	0.87	0.92	1.17	1.14	1.11	1.14	1.11	0.97	0.89
2/25/2015	0.77	0.76	0.75	0.76	0.76	0.84	1.01	0.99	0.89	0.87	0.88	0.79	0.80	0.81	0.81	0.82	0.84	0.98	1.15	1.17	1.17	1.13	0.97	0.78
2/26/2015	0.76	0.70	0.68	0.70	0.72	0.76	0.97	1.01	0.96	0.92	0.99	0.93	0.93	0.91	0.86	0.86	1.00	1.19	1.18	1.25	1.22	1.08	0.89	0.79
2/27/2015	0.75	0.74	0.72	0.74	0.80	0.83	0.96	0.99	0.92	0.85	0.85	0.86	0.80	0.75	0.74	0.79	0.87	1.10	1.14	1.16	1.08	1.06	1.01	0.88
2/28/2015	0.81	0.78	0.78	0.77	0.80	0.85	0.90	1.04	1.01	1.04	1.12	1.06	0.97	1.02	0.99	0.82	1.02	1.09	1.15	1.05	1.01	1.07	1.00	0.90
3/1/2015	0.83	0.76	0.75	0.74	0.77	0.76	0.84	0.91	1.01	1.04	1.06	1.05	1.18	1.13	1.03	1.17	1.21	1.29	1.30	1.33	1.22	1.02	0.86	0.78
3/2/2015	0.69	0.65	0.64	0.63	0.66	0.73	0.79	0.82	0.81	0.76	0.77	0.82	0.82	0.86	0.80	0.79	0.92	1.08	1.20	1.20	1.11	1.03	0.85	0.78
3/3/2015	0.69	0.66	0.66	0.67	0.70	0.82	0.91	0.90	0.80	0.77	0.76	0.75	0.81	0.81	0.83	0.80	0.89	1.11	1.24	1.09	1.04	1.01	0.85	0.76
3/4/2015	0.64	0.64	0.60	0.60	0.61	0.68	0.78	0.86	0.77	0.77	0.74	0.72	0.79	0.75	0.76	0.80	0.87	1.01	1.10	1.13	1.09	0.99	0.79	0.69
3/5/2015	0.64	0.60	0.55	0.57	0.61	0.66	0.81	0.89	0.84	0.77	0.81	0.87	0.86	0.88	0.88	0.92	1.02	1.18	1.29	1.27	1.14	1.03	0.88	0.81
3/6/2015	0.74	0.71	0.70	0.74	0.74	0.82	0.94	0.93	0.96	0.87	0.83	0.80	0.75	0.73	0.78	0.76	0.89	1.03	1.08	1.12	1.07	1.01	0.99	0.84
3/7/2015	0.78	0.74	0.71	0.73	0.76	0.78	0.86	0.93	1.01	0.99	0.95	0.97	0.92	0.90	0.90	0.96	0.99	1.05	1.03	1.10	1.02	0.97	0.88	0.76
3/8/2015	0.67	0.65	0.00	0.62	0.63	0.65	0.63	0.78	0.83	0.94	0.98	0.99	0.97	0.96	0.94	0.78	0.86	0.88	0.97	1.16	1.18	1.08	0.93	0.75
3/9/2015	0.65	0.63	0.60	0.62	0.65	0.71	0.78	0.85	0.76	0.69	0.68	0.67	0.73	0.71	0.69	0.63	0.70	0.80	1.00	0.98	1.00	0.86	0.79	0.68
3/10/2015	0.60	0.61	0.58	0.55	0.59	0.68	0.77	0.84	0.77	0.72	0.66	0.63	0.65	0.62	0.63	0.60	0.76	0.88	0.89	0.96	0.98	0.92	0.76	0.66
3/11/2015	0.57	0.54	0.51	0.51	0.53	0.61	0.70	0.74	0.70	0.62	0.61	0.59	0.62	0.57	0.56	0.60	0.65	0.74	0.85	0.96	0.88	0.88	0.78	0.61
3/12/2015	0.53	0.50	0.50	0.48	0.49	0.56	0.71	0.79	0.76	0.69	0.69	0.71	0.69	0.66	0.65	0.67	0.71	0.89	0.99	1.09	1.01	0.96	0.82	0.69
3/13/2015	0.65	0.60	0.59	0.62	0.62	0.68	0.79	0.90	0.76	0.77	0.71	0.70	0.70	0.63	0.63	0.70	0.73	0.79	0.95	0.95	0.93	0.90	0.80	0.76
3/14/2015	0.65	0.59	0.58	0.55	0.58	0.59	0.63	0.76	0.84	0.90	0.92	0.96	0.94	0.99	1.03	1.02	0.94	0.97	0.92	1.03	0.95	0.84	0.78	0.71
3/15/2015	0.60	0.55	0.55	0.52	0.54	0.59	0.61	0.70	0.85	0.84	0.91	0.98	0.98	0.91	0.82	0.90	0.94	0.91	1.02	1.04	1.03	0.99	0.82	0.70
3/16/2015	0.63	0.58	0.56	0.57	0.60	0.68	0.79	0.83	0.79	0.73	0.67	0.73	0.70	0.67	0.66	0.64	0.68	0.82	0.94	0.96	1.04	0.93	0.81	0.61
3/17/2015	0.55	0.51	0.51	0.50	0.53	0.59	0.69	0.80	0.74	0.75	0.71	0.74	0.76	0.65	0.67	0.62	0.76	0.91	0.86	1.00	0.96	0.97	0.86	0.70
3/18/2015	0.68	0.61	0.60	0.60	0.61	0.75	0.85	0.91	0.80	0.79	0.75	0.82	0.77	0.76	0.73	0.77	0.82	0.96	1.04	1.06	1.10	0.97	0.88	0.79
3/19/2015	0.71	0.67	0.66	0.63	0.65	0.73	0.85	0.91	0.84	0.91	0.83	0.81	0.74	0.75	0.74	0.70	0.78	0.93	1.00	1.12	1.14	0.99	0.90	0.74
3/20/2015	0.66	0.66	0.65	0.64	0.69	0.73	0.85	0.95	0.83	0.81	0.77	0.77	0.78	0.78	0.85	0.88	0.96	1.04	0.98	1.00	0.99	0.93	0.93	0.83
3/21/2015	0.73	0.62	0.63	0.59	0.61	0.64	0.67	0.75	0.91	0.92	0.96	1.04	1.03	0.96	0.93	0.90	0.91	0.93	0.92	0.97	0.90	0.86	0.83	0.73
3/22/2015	0.62	0.58	0.56	0.54	0.57	0.58	0.64	0.75	0.85	0.87	0.93	0.95	0.90	0.92	0.84	0.88	0.85	0.88	1.01	1.15	1.15	1.06	0.87	0.78

3/23/2015	0.75	0.66	0.63	0.66	0.69	0.78	0.89	0.93	0.85	0.85	0.82	0.78	0.75	0.77	0.79	0.76	0.76	0.85	1.03	1.06	1.02	0.97	0.84	0.76
3/24/2015	0.65	0.63	0.62	0.63	0.65	0.71	0.81	0.91	0.82	0.79	0.70	0.69	0.67	0.65	0.68	0.71	0.76	0.79	0.92	1.05	0.97	0.92	0.83	0.72
3/25/2015	0.63	0.63	0.62	0.62	0.64	0.69	0.82	0.87	0.79	0.78	0.76	0.68	0.64	0.63	0.60	0.65	0.75	0.79	0.94	1.05	1.07	0.93	0.80	0.61
3/26/2015	0.55	0.51	0.50	0.49	0.52	0.56	0.69	0.75	0.70	0.78	0.64	0.68	0.61	0.65	0.68	0.73	0.82	0.82	0.90	0.98	0.88	0.79	0.68	0.55
3/27/2015	0.50	0.49	0.44	0.46	0.47	0.54	0.66	0.71	0.77	0.67	0.72	0.72	0.66	0.64	0.70	0.77	0.89	0.88	0.90	0.91	0.94	0.87	0.80	0.66
3/28/2015	0.62	0.56	0.55	0.52	0.52	0.55	0.60	0.74	0.80	0.82	0.88	0.85	0.93	0.83	0.87	0.93	0.96	0.94	0.96	0.96	0.94	0.94	0.84	0.76
3/29/2015	0.66	0.63	0.59	0.60	0.59	0.64	0.66	0.77	0.89	0.86	0.91	0.93	0.94	0.98	1.03	0.91	0.95	0.92	0.91	1.08	1.04	1.00	0.80	0.69
3/30/2015	0.64	0.57	0.56	0.58	0.64	0.66	0.76	0.81	0.74	0.74	0.79	0.74	0.73	0.74	0.80	0.77	0.80	0.90	1.02	0.97	0.97	0.87	0.76	0.66
3/31/2015	0.59	0.57	0.54	0.54	0.56	0.63	0.73	0.75	0.69	0.65	0.70	0.67	0.65	0.61	0.63	0.64	0.72	0.82	0.94	0.94	0.96	0.85	0.72	0.61
4/1/2015	0.59	0.53	0.52	0.53	0.54	0.61	0.72	0.81	0.75	0.73	0.76	0.74	0.63	0.61	0.63	0.68	0.66	0.71	0.79	0.90	0.98	0.91	0.77	0.67
4/2/2015	0.58	0.56	0.55	0.55	0.56	0.65	0.74	0.83	0.75	0.65	0.63	0.62	0.62	0.58	0.62	0.62	0.65	0.67	0.71	0.82	0.85	0.84	0.76	0.59
4/3/2015	0.51	0.45	0.44	0.45	0.48	0.52	0.59	0.61	0.63	0.65	0.70	0.70	0.71	0.68	0.70	0.71	0.73	0.77	0.80	0.83	0.89	0.80	0.69	0.64
4/4/2015	0.48	0.45	0.45	0.46	0.45	0.48	0.55	0.63	0.76	0.79	0.81	0.85	0.84	0.87	0.77	0.77	0.79	0.78	0.80	0.90	0.87	0.87	0.75	0.71
4/5/2015	0.60	0.52	0.51	0.53	0.52	0.55	0.60	0.70	0.82	0.90	0.93	0.98	1.00	0.77	0.66	0.67	0.71	0.80	0.88	0.98	1.03	0.96	0.81	0.67
4/6/2015	0.58	0.50	0.48	0.48	0.52	0.63	0.73	0.73	0.69	0.71	0.73	0.66	0.65	0.60	0.57	0.59	0.58	0.66	0.80	0.91	0.97	0.92	0.77	0.62
4/7/2015	0.54	0.47	0.45	0.43	0.46	0.55	0.65	0.67	0.62	0.65	0.63	0.67	0.67	0.66	0.66	0.72	0.80	0.94	0.97	1.00	0.93	0.86	0.72	0.60
4/8/2015	0.53	0.50	0.50	0.51	0.50	0.58	0.66	0.76	0.74	0.72	0.72	0.68	0.64	0.63	0.69	0.71	0.85	0.89	0.92	1.00	0.99	0.90	0.80	0.66
4/9/2015	0.59	0.54	0.56	0.56	0.55	0.61	0.71	0.79	0.82	0.79	0.75	0.76	0.81	0.74	0.74	0.70	0.82	0.95	1.03	0.98	0.92	0.85	0.75	0.58
4/10/2015	0.53	0.50	0.49	0.49	0.50	0.56	0.66	0.72	0.74	0.65	0.65	0.72	0.75	0.72	0.68	0.69	0.70	0.78	0.80	0.91	0.91	0.83	0.71	0.60
4/11/2015	0.53	0.48	0.43	0.42	0.44	0.45	0.53	0.61	0.67	0.67	0.67	0.70	0.72	0.78	0.68	0.74	0.69	0.75	0.75	0.85	0.84	0.75	0.69	0.62
4/12/2015	0.54	0.47	0.45	0.44	0.45	0.48	0.58	0.68	0.75	0.79	0.76	0.77	0.79	0.64	0.62	0.69	0.73	0.76	0.83	0.94	0.92	0.82	0.63	0.52
4/13/2015	0.45	0.45	0.44	0.42	0.47	0.51	0.61	0.70	0.61	0.61	0.63	0.65	0.63	0.57	0.57	0.56	0.69	0.81	0.78	0.86	0.96	0.86	0.69	0.57
4/14/2015	0.49	0.41	0.40	0.39	0.41	0.46	0.53	0.61	0.58	0.63	0.62	0.57	0.55	0.54	0.57	0.59	0.72	0.74	0.79	0.84	0.88	0.86	0.64	0.55
4/15/2015	0.44	0.41	0.41	0.41	0.41	0.51	0.62	0.68	0.65	0.54	0.61	0.57	0.54	0.52	0.51	0.51	0.59	0.65	0.71	0.83	0.79	0.77	0.65	0.53
4/16/2015	0.42	0.40	0.38	0.40	0.39	0.50	0.67	0.70	0.64	0.58	0.58	0.57	0.58	0.51	0.47	0.49	0.62	0.69	0.70	0.77	0.81	0.76	0.62	0.54
4/17/2015	0.47	0.42	0.41	0.40	0.42	0.50	0.60	0.62	0.65	0.68	0.66	0.61	0.65	0.57	0.63	0.60	0.65	0.75	0.75	0.84	0.83	0.84	0.64	0.60
4/18/2015	0.50	0.47	0.45	0.43	0.44	0.46	0.53	0.63	0.72	0.70	0.73	0.70	0.69	0.65	0.73	0.71	0.68	0.73	0.78	0.81	0.76	0.72	0.62	0.53
4/19/2015	0.46	0.40	0.37	0.39	0.38	0.41	0.47	0.61	0.66	0.68	0.80	0.77	0.78	0.76	0.77	0.72	0.68	0.71	0.79	0.78	0.76	0.87	0.67	0.55
4/20/2015	0.45	0.42	0.42	0.39	0.42	0.46	0.57	0.61	0.66	0.65	0.70	0.72	0.74	0.72	0.70	0.75	0.86	0.91	0.91	0.91	0.87	0.82	0.67	0.53
4/21/2015	0.47	0.42	0.39	0.39	0.41	0.48	0.56	0.60	0.58	0.57	0.54	0.56	0.59	0.56	0.56	0.59	0.58	0.70	0.75	0.74	0.81	0.70	0.61	0.55
4/22/2015	0.47	0.42	0.41	0.40	0.42	0.47	0.55	0.59	0.60	0.58	0.52	0.55	0.56	0.51	0.50	0.49	0.56	0.66	0.74	0.69	0.80	0.75	0.62	0.53
4/23/2015	0.46	0.39	0.38	0.39	0.39	0.48	0.56	0.60	0.66	0.61	0.61	0.64	0.67	0.66	0.60	0.61	0.71	0.76	0.75	0.82	0.87	0.83	0.69	0.58
4/24/2015	0.51	0.48	0.46	0.49	0.49	0.55	0.65	0.66	0.67	0.66	0.60	0.61	0.56	0.58	0.60	0.55	0.61	0.63	0.76	0.73	0.87	0.79	0.74	0.66
4/25/2015	0.56	0.49	0.48	0.50	0.52	0.56	0.61	0.63	0.73	0.86	0.83	0.85	0.79	0.73	0.65	0.63	0.65	0.73	0.75	0.70	0.73	0.71	0.72	0.61
4/26/2015	0.51	0.46	0.43	0.46	0.43	0.49	0.51	0.62	0.73	0.72	0.78	0.75	0.70	0.77	0.74	0.70	0.73	0.74	0.78	0.83	0.83	0.80	0.66	0.56
4/27/2015	0.50	0.43	0.40	0.38	0.39	0.48	0.59	0.67	0.59	0.55	0.52	0.54	0.58	0.60	0.55	0.61	0.66	0.81	0.84	0.82	0.82	0.73	0.65	0.53
4/28/2015	0.42	0.39	0.38	0.37	0.38	0.46	0.54	0.61	0.55	0.56	0.53	0.50	0.57	0.53	0.49	0.49	0.57	0.63	0.69	0.70	0.81	0.73	0.59	0.46
4/29/2015	0.40	0.35	0.36	0.37	0.40	0.42	0.53	0.57	0.55	0.48	0.52	0.53	0.55	0.43	0.48	0.54	0.58	0.62	0.71	0.77	0.87	0.79	0.64	0.52
4/30/2015	0.43	0.39	0.36	0.38	0.41	0.46	0.55	0.63	0.62	0.60	0.58	0.53	0.55	0.52	0.48	0.52	0.60	0.69	0.67	0.77	0.92	0.76	0.64	0.52
5/1/2015	0.46	0.43	0.41	0.42	0.43	0.51	0.60	0.63	0.61	0.58	0.60	0.57	0.62	0.64	0.61	0.60	0.65	0.67	0.69	0.81	0.90	0.81	0.70	0.59
5/2/2015	0.50	0.49	0.48	0.50	0.48	0.51	0.57	0.66	0.78	0.81	0.76	0.78	0.82	0.75	0.74	0.64	0.69	0.79	0.74	0.79	0.76	0.84	0.72	0.58
5/3/2015	0.52	0.47	0.41	0.43	0.44	0.47	0.53	0.58	0.74	0.69	0.82	0.77	0.73	0.77	0.68	0.72	0.69	0.72	0.84	0.86	0.96	0.87	0.69	0.51
5/4/2015	0.44	0.43	0.40	0.42	0.44	0.50	0.57	0.66	0.58	0.56	0.57	0.58	0.58	0.55	0.60	0.65	0.61	0.67	0.73	0.76	0.86	0.78	0.73	0.53
5/5/2015	0.44	0.39	0.38	0.39	0.38	0.44	0.53	0.56	0.57	0.53	0.53	0.57	0.55	0.58	0.54	0.62	0.64	0.66	0.73	0.80	0.87	0.79	0.67	0.54
5/6/2015	0.42	0.39	0.36	0.36	0.36	0.42	0.54	0.59	0.56	0.56	0.65	0.60	0.55	0.54	0.52	0.55	0.57	0.62	0.73	0.79	0.90	0.86	0.66	0.51
5/7/2015	0.44	0.40	0.39	0.36	0.37	0.45	0.55	0.54	0.55	0.58	0.61	0.62	0.55	0.59	0.53	0.57	0.66	0.72	0.67	0.78	0.86	0.79	0.71	0.53
5/8/2015	0.45	0.39	0.37	0.37	0.38	0.43	0.53	0.51	0.55	0.58	0.58	0.54	0.61	0.56	0.60	0.61	0.68	0.75	0.77	0.84	0.83	0.76	0.64	0.57
5/9/2015	0.49	0.41	0.39	0.38	0.38	0.41	0.47	0.59	0.77	0.78	0.76	0.71	0.68	0.72	0.67	0.68	0.73	0.71	0.68	0.75	0.76	0.73	0.70	0.56
5/10/2015	0.47	0.45	0.39	0.38	0.37	0.40	0.46	0.55	0.73	0.78	0.78	0.75	0.74	0.75	0.80	0.76	0.83	0.88	0.90	0.94	0.98	0.90	0.79	0.63
5/11/2015	0.52	0.48	0.47	0.45	0.45	0.48	0.58	0.62	0.64	0.65	0.75	0.78	0.78	0.79	0.84	0.92	0.97	1.00	1.05	1.05	1.12	1.01	0.86	0.68
5/12/2015	0.64	0.53	0.48	0.46	0.44	0.50	0.61	0.66	0.63	0.58	0.61	0.67	0.74	0.86	0.84	0.85	0.96	0.96	1.02	0.96	0.96	0.99	0.85	0.69
5/13/2015	0.54	0.49	0.45	0.42	0.41	0.49	0.60	0.64	0.60	0.58	0.59	0.57	0.56	0.51	0.53	0.57	0.62	0.80	0.81	0.84	0.86	0.77	0.71	0.52
5/14/2015	0.44	0.40	0.39	0.38	0.38	0.43	0.53	0.57	0.58	0.60	0.55	0.61	0.59	0.53	0.50	0.55	0.62	0.72	0.76	0.76	0.83	0.77	0.66	0.51
5/15/2015	0.41	0.38	0.36	0.37	0.37	0.45	0.55	0.55	0.61	0.56	0.54	0.60	0.58	0.53	0.55	0.57	0.65	0.69	0.82	0.78	0.86	0.76	0.68	0.55
5/16/2015	0.50	0.41	0.41	0.38	0.41	0.43	0.48	0.61	0.65	0.74	0.82	0.82	0.82	0.72	0.77	0.83	0.74	0.86	0.90	0.83	0.86	0.76	0.70	0.58
5/17/2015	0.49	0.44	0.41	0.43	0.41	0.44	0.47	0.58	0.74	0.80	0.96	0.93	0.89	0.92	0.94	0.94	0.93	0.93	0.95	1.01	0.98	0.95	0.78	0.59
5/18/2015	0.55	0.48	0.44	0.43	0.43	0.48	0.57	0.63	0.56	0.56	0.68	0.62	0.63	0.61	0.68	0.70	0.76	0.81	0.87	0.82	0.85	0.86	0.66	0.57
5/19/2015	0.48	0.39	0.36	0.36	0.38	0.43	0.58	0.56	0.58	0.60	0.62	0.61	0.62	0.58	0.60	0.63	0.64	0.80	0.81	0.86	0.95	0.84	0.76	0.59
5/20/2015	0.46	0.42	0.38	0.39	0.37	0.44	0.53	0.60	0.62	0.52	0.59	0.57	0.55	0.59	0.62	0.60	0.64	0.73	0.76	0.82	0.87	0.85	0.71	0.55
5/21/2015	0.44	0.40	0.41	0.42	0.42	0.48	0.56	0.60	0.61	0.61	0.57	0.59	0.59	0.54	0.53	0.60	0.65	0.72	0.78	0.84	0.89	0.84	0.68	0.56
5/22/2015	0.43	0.38	0.38	0.36	0.36	0.43	0.55	0.58	0.62	0.58	0.58	0.61	0.60	0.63	0.57	0.64	0.70	0.69	0.74	0.76	0.81	0.75	0.72	0.61
5/23/2015	0.51	0.42	0.39	0.38	0.39	0.39	0.46	0.52	0.69	0.75	0.77	0.77	0.76	0.77	0.76	0.78	0.75	0.79	0.84	0.85	0.91	0.81	0.82	0.63
5/24/2015	0.54	0.46	0.41	0.40	0.40	0.43	0.44	0.54	0.68	0.72	0.79	0.89	0.85	0.76	0.79	0.77	0.80	0.77	0.77	0.77	0.82	0.77	0.71	0.59
5/25/2015	0.50	0.43	0.41	0.40	0.40	0.42	0.46	0.54	0.71	0.78	0.82	0.81	0.82	0.84	0.88	0.82	0.84	0.93	0.96	0.98	0.93	0.88	0.76	0.61
5/26/2015	0.49	0.45	0.43	0.41	0.41	0.45	0.62	0.66	0.67	0.66	0.67	0.69	0.70	0.66	0.69	0.81	0.89	1.05	1.01	0.98	1.02	0.94	0.80	0.67
5/27/2015	0.59	0.53	0.48	0.47	0.48	0.54	0.61	0.62	0.63	0.67	0.70	0.72	0.70	0.76	0.80	0.74	0.92	1.03	1.08	1.09	1.03	1.03	0.84	0.70
5/28/2015	0.56	0.52	0.50	0.45	0.47	0.52	0.64	0.63	0.61	0.65	0.63	0.67	0.72	0.74	0.79	0.83	0.93	1.03	1.04	1.03	1.02	1.09	0.86	0.71
5/29/2015	0.59	0.53	0.49	0.45	0.45	0.50	0.64	0.67	0.68	0.71	0.77	0.80	0.84	0.80	0.83	0.93	0.97	1.02	0.99	0.90	1.03	1.04	0.87	0.67
5/30/2015	0.56	0.48	0.48	0.46	0.43	0.44	0.53	0.62	0.78	0.77	0.84	0.84	0.99	0.99	1.03	1.04	0.99	1.07	1.08	1.00	0.97	0.99	0.85	0.70
5/31/2015	0.60	0.54	0.49	0.47	0.47	0.49	0.56	0.67	0.80	0.93	0.99	0.99	0.97	1.07	1.06	0.99	1.06	1.05	1.06	0.98	0.88	0.80	0.69	0.53
6/1/2015	0.45	0.42	0.39	0.39	0.37	0.46	0.56	0.63	0.60	0.64	0.60	0.63	0.65	0.66	0.68	0.76	0.83	0.81	0.87	0.94	0.95	0.83	0.77	0.58
6/2/2015	0.45	0.43	0.39	0.40	0.39	0.49	0.59	0.68	0.75	0.69	0.71	0.69	0.68	0.66	0.65	0.74	0.84	0.92	0.93	0.94	0.95	0.88	0.72	0.56
6/3/2015	0.52	0.44	0.41	0.42	0.42	0.50	0.61	0.65	0.71	0.63	0.65	0.61	0.61	0.55	0.55	0.54	0.69	0.75	0.81	0.83	0.82	0.88	0.79	0.58
6/4/2015	0.50	0.47	0.44	0.44	0.46	0.53	0.63	0.68	0.65	0.59	0.60	0.60	0.65	0.62	0.62	0.61	0.71	0.73	0.82	0.87	0.88	0.90	0.69	0.54

6/5/2015	0.46	0.43	0.40	0.40	0.41	0.48	0.60	0.64	0.69	0.60	0.60	0.62	0.65	0.65	0.65	0.71	0.74	0.73	0.79	0.81	0.90	0.84	0.73	0.61
6/6/2015	0.48	0.43	0.43	0.43	0.40	0.44	0.53	0.61	0.83	0.83	0.75	0.86	0.80	0.78	0.77	0.86	0.82	0.88	0.92	0.81	0.78	0.74	0.75	0.60
6/7/2015	0.49	0.46	0.44	0.42	0.39	0.43	0.47	0.58	0.69	0.73	0.82	0.76	0.81	0.73	0.76	0.80	0.81	0.89	0.86	0.84	0.91	0.85	0.74	0.57
6/8/2015	0.43	0.42	0.39	0.38	0.38	0.49	0.58	0.61	0.64	0.59	0.59	0.64	0.66	0.64	0.60	0.66	0.75	0.82	0.81	0.87	0.97	0.86	0.73	0.60
6/9/2015	0.49	0.46	0.43	0.41	0.40	0.47	0.57	0.60	0.60	0.62	0.66	0.66	0.71	0.69	0.69	0.76	0.77	0.94	0.96	0.92	1.03	0.92	0.75	0.64
6/10/2015	0.56	0.48	0.46	0.46	0.45	0.51	0.59	0.64	0.66	0.63	0.64	0.66	0.69	0.72	0.81	0.80	0.91	1.03	1.03	1.02	1.02	0.97	0.89	0.76
6/11/2015	0.60	0.52	0.47	0.46	0.47	0.52	0.64	0.66	0.68	0.65	0.68	0.75	0.79	0.81	0.89	1.00	1.08	1.20	1.21	1.21	1.27	1.27	1.08	0.91
6/12/2015	0.79	0.71	0.63	0.60	0.57	0.61	0.76	0.74	0.79	0.80	0.86	0.86	0.95	1.06	1.06	1.13	1.16	1.19	1.12	1.15	1.09	1.05	0.94	0.83
6/13/2015	0.71	0.64	0.59	0.55	0.55	0.56	0.62	0.76	0.89	0.98	1.09	1.15	1.14	1.23	1.24	1.23	1.24	1.23	1.23	1.18	1.09	1.07	0.98	0.87
6/14/2015	0.73	0.65	0.58	0.56	0.56	0.56	0.59	0.72	0.81	0.89	0.97	1.08	1.15	1.29	1.21	1.21	1.18	1.15	1.19	1.11	1.18	1.06	0.94	0.72
6/15/2015	0.61	0.57	0.52	0.48	0.48	0.50	0.60	0.66	0.64	0.63	0.67	0.74	0.64	0.65	0.69	0.68	0.79	0.89	0.87	0.87	0.87	0.75	0.69	0.58
6/16/2015	0.49	0.44	0.40	0.40	0.40	0.48	0.57	0.57	0.64	0.64	0.66	0.60	0.65	0.65	0.68	0.66	0.75	0.89	0.90	0.95	1.06	1.02	0.83	0.68
6/17/2015	0.59	0.54	0.51	0.50	0.49	0.50	0.58	0.67	0.65	0.68	0.69	0.71	0.74	0.71	0.79	0.74	0.79	0.95	0.96	0.91	1.00	0.91	0.78	0.66
6/18/2015	0.56	0.50	0.46	0.45	0.44	0.48	0.59	0.67	0.64	0.60	0.58	0.63	0.66	0.65	0.63	0.76	0.88	0.95	0.96	0.86	0.98	0.96	0.78	0.64
6/19/2015	0.54	0.49	0.46	0.46	0.45	0.51	0.60	0.65	0.67	0.67	0.74	0.78	0.89	0.95	1.00	0.96	1.05	1.07	1.20	1.16	1.22	1.11	0.97	0.82
6/20/2015	0.70	0.60	0.52	0.51	0.51	0.50	0.54	0.65	0.77	0.76	0.82	0.88	0.90	0.89	0.89	0.97	0.90	0.89	0.86	0.79	0.89	0.83	0.78	0.65
6/21/2015	0.58	0.49	0.48	0.49	0.49	0.52	0.56	0.67	0.82	0.83	0.86	0.87	0.89	0.93	0.96	0.97	1.10	1.15	1.14	1.14	1.20	1.18	1.02	0.85
6/22/2015	0.71	0.65	0.60	0.59	0.56	0.59	0.71	0.82	0.79	0.79	0.81	0.97	1.11	1.14	1.18	1.24	1.31	1.38	1.43	1.28	1.24	1.26	1.11	0.90
6/23/2015	0.77	0.66	0.61	0.59	0.60	0.63	0.72	0.76	0.71	0.76	0.83	0.92	1.04	1.05	1.08	1.18	1.25	1.31	1.24	1.23	1.20	1.21	1.08	0.89
6/24/2015	0.73	0.69	0.64	0.59	0.58	0.62	0.67	0.74	0.82	0.76	0.78	0.91	0.98	1.00	1.09	1.12	1.23	1.34	1.28	1.29	1.29	1.28	1.10	0.86
6/25/2015	0.70	0.63	0.58	0.56	0.57	0.60	0.64	0.68	0.76	0.76	0.83	0.93	1.03	1.13	1.07	1.11	1.14	1.13	1.21	1.16	1.16	1.12	1.01	0.81
6/26/2015	0.70	0.63	0.60	0.54	0.54	0.58	0.64	0.72	0.68	0.73	0.75	0.77	0.75	0.80	0.89	0.87	1.00	1.07	1.04	0.98	0.93	0.96	0.77	0.67
6/27/2015	0.59	0.55	0.49	0.49	0.46	0.49	0.52	0.63	0.73	0.77	0.86	0.92	1.03	0.93	0.95	0.93	0.91	0.88	0.91	0.83	0.84	0.79	0.69	0.63
6/28/2015	0.54	0.48	0.45	0.46	0.44	0.46	0.47	0.53	0.66	0.76	0.79	0.83	0.83	0.83	0.87	0.89	0.85	0.91	0.92	0.94	0.98	0.88	0.80	0.67
6/29/2015	0.52	0.46	0.43	0.43	0.44	0.48	0.55	0.57	0.69	0.66	0.74	0.71	0.67	0.75	0.75	0.77	0.79	0.97	1.08	0.99	1.01	0.93	0.83	0.65
6/30/2015	0.54	0.49	0.47	0.46	0.44	0.49	0.58	0.61	0.66	0.75	0.79	0.85	0.88	0.97	1.03	1.05	1.08	1.16	1.27	1.14	1.14	1.05	0.94	0.81
7/1/2015	0.71	0.63	0.58	0.55	0.54	0.56	0.63	0.65	0.68	0.76	0.84	0.84	0.84	0.90	0.96	1.00	1.11	1.22	1.32	1.30	1.33	1.27	1.15	0.91
7/2/2015	0.77	0.63	0.59	0.55	0.54	0.56	0.65	0.72	0.75	0.81	0.87	0.96	1.02	1.04	1.10	1.07	1.16	1.17	1.20	1.10	1.09	1.07	0.90	0.81
7/3/2015	0.67	0.63	0.57	0.53	0.51	0.52	0.57	0.67	0.80	0.83	0.93	0.96	0.98	1.05	1.10	1.15	1.18	1.24	1.15	1.11	1.03	0.96	0.94	0.78
7/4/2015	0.67	0.60	0.53	0.53	0.51	0.52	0.54	0.68	0.81	0.99	0.97	0.96	1.02	1.03	0.93	0.85	0.87	0.91	0.92	0.88	0.81	0.84	0.82	0.66
7/5/2015	0.58	0.54	0.49	0.49	0.46	0.48	0.54	0.63	0.72	0.82	0.93	0.99	1.08	1.18	1.21	1.16	1.19	1.30	1.28	1.30	1.25	1.14	1.05	0.88
7/6/2015	0.73	0.66	0.60	0.58	0.57	0.57	0.62	0.65	0.76	0.80	0.89	1.00	1.16	1.29	1.31	1.32	1.38	1.40	1.49	1.32	1.33	1.38	1.16	0.94
7/7/2015	0.80	0.70	0.63	0.62	0.60	0.64	0.69	0.79	0.83	0.84	0.91	0.94	1.10	1.13	1.23	1.37	1.31	1.41	1.44	1.41	1.38	1.37	1.24	1.06
7/8/2015	0.88	0.80	0.71	0.69	0.68	0.74	0.78	0.85	0.90	0.95	1.08	1.04	1.12	1.25	1.38	1.40	1.46	1.48	1.49	1.38	1.40	1.33	1.21	1.00
7/9/2015	0.87	0.77	0.70	0.66	0.65	0.65	0.76	0.77	0.81	0.83	0.90	0.94	0.94	1.02	1.11	1.16	1.21	1.23	1.21	1.16	1.18	1.14	1.02	0.84
7/10/2015	0.72	0.64	0.59	0.60	0.55	0.61	0.66	0.75	0.74	0.75	0.76	0.88	0.93	0.96	1.04	1.09	1.13	1.17	1.12	1.11	1.08	1.05	1.05	0.96
7/11/2015	0.82	0.70	0.64	0.58	0.55	0.55	0.63	0.72	0.92	0.94	1.12	1.26	1.27	1.36	1.39	1.48	1.41	1.45	1.32	1.22	1.27	1.20	1.05	0.96
7/12/2015	0.83	0.72	0.64	0.61	0.58	0.57	0.66	0.75	0.90	1.03	1.14	1.26	1.36	1.38	1.43	1.55	1.54	1.57	1.45	1.44	1.40	1.44	1.27	1.06
7/13/2015	0.92	0.83	0.75	0.70	0.70	0.68	0.75	0.81	0.86	0.96	1.00	1.17	1.23	1.30	1.38	1.38	1.45	1.50	1.52	1.43	1.35	1.30	1.18	0.95
7/14/2015	0.81	0.73	0.68	0.64	0.61	0.66	0.72	0.85	0.84	0.89	0.84	0.96	0.99	1.07	1.12	1.21	1.26	1.33	1.31	1.26	1.24	1.26	1.09	0.96
7/15/2015	0.82	0.75	0.69	0.65	0.66	0.69	0.74	0.87	0.90	1.03	1.08	1.16	1.35	1.34	1.40	1.36	1.36	1.46	1.38	1.39	1.44	1.26	1.10	0.91
7/16/2015	0.80	0.72	0.67	0.61	0.58	0.61	0.67	0.68	0.76	0.79	0.78	0.76	0.85	0.89	0.91	0.94	0.98	1.05	1.06	1.07	1.08	1.01	0.95	0.73
7/17/2015	0.62	0.57	0.53	0.52	0.52	0.53	0.59	0.65	0.72	0.71	0.75	0.83	0.95	0.91	0.94	0.90	1.01	1.04	1.01	1.00	1.02	0.98	0.90	0.80
7/18/2015	0.71	0.61	0.58	0.55	0.53	0.53	0.58	0.70	0.77	0.87	0.93	1.06	1.03	1.06	1.05	1.10	1.15	1.06	1.15	1.11	1.09	1.08	1.02	0.92
7/19/2015	0.77	0.73	0.72	0.68	0.64	0.65	0.68	0.82	0.90	1.04	1.24	1.46	1.58	1.66	1.67	1.67	1.58	1.57	1.60	1.53	1.54	1.58	1.34	1.14
7/20/2015	0.96	0.89	0.81	0.76	0.75	0.78	0.87	0.93	1.04	1.25	1.40	1.49	1.58	1.66	1.75	1.80	1.74	1.79	1.86	1.76	1.68	1.72	1.45	1.17
7/21/2015	1.02	0.90	0.86	0.81	0.77	0.80	0.88	0.94	0.93	1.03	1.06	1.14	1.21	1.31	1.38	1.52	1.58	1.64	1.57	1.56	1.51	1.47	1.31	1.11
7/22/2015	0.97	0.86	0.79	0.75	0.71	0.69	0.76	0.79	0.85	0.92	0.96	1.06	1.13	1.15	1.16	1.24	1.39	1.46	1.48	1.36	1.30	1.26	1.13	0.93
7/23/2015	0.77	0.72	0.65	0.60	0.61	0.61	0.67	0.74	0.81	0.84	0.87	0.95	0.98	1.10	1.09	1.14	1.26	1.34	1.34	1.23	1.22	1.27	1.07	0.88
7/24/2015	0.75	0.68	0.62	0.60	0.59	0.58	0.65	0.75	0.83	0.87	0.86	0.99	0.99	1.10	1.09	1.08	1.11	1.12	1.02	0.99	0.98	0.98	0.96	0.77
7/25/2015	0.66	0.61	0.55	0.54	0.52	0.54	0.57	0.68	0.79	0.85	0.93	1.06	1.08	1.08	1.07	1.05	1.08	1.08	1.04	1.07	1.00	0.97	0.89	0.80
7/26/2015	0.70	0.64	0.58	0.57	0.56	0.55	0.59	0.64	0.77	0.83	0.91	1.04	1.06	1.04	1.11	1.14	1.19	1.23	1.23	1.20	1.21	1.21	1.08	0.86
7/27/2015	0.76	0.71	0.66	0.62	0.63	0.66	0.70	0.82	0.85	0.90	0.87	0.97	1.05	1.03	1.03	1.16	1.25	1.35	1.32	1.34	1.33	1.24	1.09	0.93
7/28/2015	0.79	0.71	0.67	0.65	0.64	0.66	0.75	0.82	0.82	0.92	1.00	1.16	1.39	1.45	1.50	1.53	1.52	1.47	1.47	1.44	1.51	1.49	1.28	1.08
7/29/2015	0.92	0.79	0.75	0.70	0.68	0.72	0.76	0.89	0.97	1.07	1.23	1.38	1.47	1.51	1.55	1.65	1.71	1.81	1.81	1.82	1.86	1.67	1.49	1.25
7/30/2015	1.07	0.98	0.89	0.87	0.82	0.84	0.88	1.05	1.07	1.22	1.33	1.51	1.51	1.55	1.70	1.66	1.66	1.66	1.59	1.59	1.58	1.46	1.26	1.09
7/31/2015	0.99	0.90	0.82	0.78	0.77	0.77	0.83	0.93	1.09	1.09	1.22	1.28	1.38	1.43	1.47	1.48	1.56	1.58	1.55	1.48	1.44	1.37	1.25	1.05
8/1/2015	0.90	0.79	0.72	0.68	0.66	0.66	0.72	0.85	0.97	1.08	1.18	1.38	1.53	1.58	1.61	1.62	1.54	1.58	1.56	1.40	1.36	1.34	1.25	1.09
8/2/2015	0.94	0.83	0.76	0.72	0.69	0.66	0.70	0.77	0.95	1.09	1.21	1.30	1.35	1.39	1.50	1.55	1.61	1.62	1.49	1.47	1.45	1.40	1.33	1.06
8/3/2015	0.93	0.81	0.80	0.76	0.74	0.76	0.82	0.96	0.93	1.07	1.23	1.30	1.39	1.45	1.59	1.63	1.71	1.74	1.70	1.63	1.65	1.49	1.36	1.24
8/4/2015	1.06	0.94	0.91	0.84	0.84	0.85	0.75	0.61	0.62	0.72	0.81	0.90	0.99	1.03	1.13	1.29	1.39	1.43	1.49	1.43	1.36	1.37	1.16	1.00
8/5/2015	0.86	0.75	0.68	0.65	0.62	0.66	0.69	0.80	0.80	0.88	0.93	1.04	1.17	1.27	1.25	1.30	1.39	1.48	1.42	1.39	1.46	1.43	1.25	0.97
8/6/2015	0.81	0.73	0.66	0.64	0.60	0.64	0.68	0.72	0.81	0.83	0.85	0.88	0.97	1.08	1.04	1.06	1.18	1.18	1.11	1.18	1.28	1.17	1.05	0.89
8/7/2015	0.75	0.68	0.61	0.59	0.57	0.62	0.67	0.81	0.82	0.78	0.82	0.92	0.99	1.02	1.09	1.11	1.17	1.20	1.19	1.07	1.18	1.08	0.95	0.86
8/8/2015	0.77	0.66	0.61	0.58	0.55	0.55	0.61	0.66	0.83	0.93	0.93	0.99	1.20	1.24	1.27	1.21	1.24	1.23	1.16	1.10	1.08	1.03	0.95	0.84
8/9/2015	0.72	0.64	0.58	0.54	0.52	0.53	0.58	0.74	0.82	0.89	0.96	1.00	0.96	1.03	0.95	0.96	1.05	1.06	0.99	0.92	1.03	1.03	0.88	0.72
8/10/2015	0.61	0.53	0.51	0.50	0.48	0.54	0.57	0.66	0.73	0.76	0.82	0.80	0.97	1.00	1.00	1.04	1.09	1.13	1.12	1.08	1.14	1.12	0.92	0.76
8/11/2015	0.66	0.59	0.57	0.55	0.56	0.60	0.71	0.73	0.75	0.75	0.79	0.82	0.84	0.80	0.86	0.81	0.90	1.03	1.03	1.11	1.18	1.07	0.98	0.84
8/12/2015	0.72	0.64	0.61	0.60	0.59	0.61	0.68	0.72	0.76	0.76	0.85	0.96	1.00	1.17	1.18	1.24	1.23	1.34	1.30	1.25	1.27	1.31	1.11	0.91
8/13/2015	0.79	0.68	0.65	0.60	0.59	0.63	0.69	0.71	0.79	0.82	0.89	0.98	0.99	1.11	1.12	1.15	1.23	1.31	1.32	1.31	1.26	1.18	1.06	0.89
8/14/2015	0.75	0.67	0.61	0.58	0.56	0.59	0.65	0.74	0.78	0.81	0.80	0.97	1.00	1.16	1.24	1.39	1.51	1.41	1.26	1.21	1.25	1.16	1.09	0.93
8/15/2015	0.81	0.75	0.69	0.67	0.65	0.66	0.67	0.73	0.82	1.03	1.22	1.39	1.52	1.65	1.53	1.62	1.69	1.68	1.56	1.42	1.49	1.43	1.32	1.10
8/16/2015	0.94	0.87	0.77	0.74	0.69	0.69	0.72	0.84	0.98	1.19	1.32	1.44	1.54	1.69	1.78	1.72	1.78	1.82	1.71	1.68	1.61	1.49	1.34	1.18
8/17/2015	0.99	0.90	0.82	0.78	0.75	0.76	0.81	0.87	0.95	1.09	1.23	1.37	1.51	1.54	1.55	1.61	1.74	1.79	1.77	1.72	1.80	1.62	1.46	1.23

8/18/2015	1.07	0.96	0.90	0.81	0.78	0.80	0.88	0.95	1.06	1.13	1.24	1.37	1.51	1.57	1.71	1.79	1.79	1.89	1.77	1.68	1.69	1.62	1.40	1.14
8/19/2015	1.02	0.92	0.86	0.79	0.77	0.83	0.89	0.98	1.06	1.05	1.11	1.29	1.46	1.59	1.58	1.63	1.68	1.76	1.77	1.67	1.61	1.52	1.32	1.15
8/20/2015	0.99	0.91	0.83	0.81	0.77	0.78	0.85	0.95	0.94	1.03	1.12	1.21	1.37	1.40	1.48	1.50	1.59	1.58	1.55	1.54	1.54	1.51	1.35	1.14
8/21/2015	0.98	0.91	0.84	0.82	0.84	0.83	0.91	1.00	0.98	0.96	0.99	1.18	1.33	1.48	1.52	1.57	1.65	1.65	1.62	1.55	1.53	1.45	1.29	1.12
8/22/2015	1.02	0.89	0.80	0.77	0.77	0.74	0.76	0.85	0.99	1.13	1.20	1.36	1.50	1.47	1.42	1.51	1.54	1.49	1.33	1.25	1.23	1.21	1.12	0.95
8/23/2015	0.86	0.82	0.74	0.70	0.70	0.70	0.71	0.78	0.93	1.04	1.01	1.14	1.25	1.38	1.47	1.33	1.39	1.30	1.41	1.39	1.42	1.37	1.17	1.00
8/24/2015	0.87	0.78	0.75	0.73	0.71	0.73	0.83	0.83	0.86	0.91	0.98	1.05	1.10	1.25	1.27	1.34	1.49	1.46	1.43	1.49	1.50	1.37	1.20	1.07
8/25/2015	0.93	0.81	0.79	0.74	0.72	0.75	0.83	0.83	0.85	0.91	0.96	1.09	1.26	1.34	1.46	1.58	1.67	1.67	1.62	1.68	1.64	1.59	1.45	1.26
8/26/2015	1.09	0.97	0.91	0.84	0.79	0.80	0.88	0.92	0.93	1.02	1.09	1.20	1.37	1.35	1.34	1.37	1.52	1.55	1.46	1.41	1.41	1.25	1.11	0.94
8/27/2015	0.80	0.75	0.68	0.62	0.61	0.64	0.71	0.72	0.73	0.71	0.76	0.87	0.91	0.98	1.07	1.07	1.13	1.18	1.20	1.15	1.13	1.05	0.94	0.83
8/28/2015	0.73	0.65	0.59	0.58	0.55	0.60	0.68	0.66	0.71	0.70	0.72	0.82	0.85	0.96	1.01	1.07	1.17	1.14	1.13	1.05	1.03	0.96	0.89	0.75
8/29/2015	0.66	0.61	0.59	0.55	0.53	0.53	0.54	0.65	0.79	0.87	0.89	0.93	1.12	1.25	1.19	1.26	1.30	1.22	1.16	1.10	1.05	1.03	0.92	0.85
8/30/2015	0.73	0.66	0.60	0.60	0.56	0.59	0.59	0.67	0.84	0.95	1.06	1.25	1.33	1.44	1.56	1.57	1.60	1.65	1.53	1.63	1.53	1.44	1.23	1.03
8/31/2015	0.90	0.84	0.77	0.73	0.72	0.75	0.84	0.87	0.88	0.93	1.07	1.31	1.38	1.43	1.52	1.54	1.55	1.69	1.62	1.62	1.62	1.43	1.31	1.13
9/1/2015	0.90	0.80	0.75	0.71	0.68	0.73	0.83	0.80	0.79	0.89	0.99	1.12	1.22	1.29	1.41	1.41	1.51	1.60	1.60	1.53	1.41	1.26	1.15	1.01
9/2/2015	0.78	0.73	0.67	0.63	0.67	0.69	0.78	0.78	0.80	0.82	0.93	1.06	1.23	1.34	1.41	1.48	1.52	1.66	1.58	1.52	1.54	1.46	1.26	1.08
9/3/2015	0.91	0.82	0.74	0.70	0.68	0.72	0.85	0.80	0.87	0.89	0.95	1.14	1.34	1.47	1.53	1.63	1.65	1.81	1.68	1.66	1.63	1.64	1.32	1.20
9/4/2015	1.11	0.95	0.88	0.80	0.77	0.81	0.88	0.92	0.86	0.87	0.88	0.93	1.02	1.08	1.09	1.16	1.20	1.24	1.26	1.18	1.13	1.02	0.89	0.84
9/5/2015	0.71	0.63	0.59	0.58	0.57	0.58	0.60	0.71	0.85	0.84	0.89	1.01	1.04	1.05	1.07	1.13	1.20	1.17	1.02	1.03	0.99	0.92	0.85	0.76
9/6/2015	0.69	0.59	0.55	0.53	0.51	0.55	0.56	0.63	0.74	0.83	0.91	0.97	1.15	1.21	1.15	1.16	1.15	1.11	1.02	1.09	1.05	0.99	0.92	0.79
9/7/2015	0.68	0.59	0.56	0.53	0.54	0.55	0.56	0.63	0.77	0.94	1.06	1.13	1.31	1.45	1.53	1.54	1.59	1.53	1.44	1.53	1.48	1.35	1.21	0.94
9/8/2015	0.84	0.77	0.74	0.71	0.67	0.69	0.84	0.83	0.85	0.93	1.08	1.28	1.40	1.55	1.58	1.75	1.77	1.79	1.71	1.73	1.68	1.56	1.36	1.15
9/9/2015	1.04	0.95	0.85	0.80	0.76	0.80	0.90	0.94	0.98	1.10	1.22	1.31	1.42	1.48	1.55	1.59	1.68	1.69	1.74	1.76	1.68	1.52	1.29	1.16
9/10/2015	1.00	0.91	0.84	0.81	0.78	0.82	0.92	0.91	0.93	0.93	0.92	0.93	0.95	0.91	0.92	0.92	1.01	1.15	1.15	1.16	1.13	1.01	0.89	0.83
9/11/2015	0.72	0.64	0.62	0.59	0.58	0.61	0.72	0.70	0.74	0.68	0.67	0.71	0.74	0.72	0.70	0.78	0.86	0.87	0.93	0.88	0.98	0.88	0.80	0.70
9/12/2015	0.59	0.55	0.53	0.50	0.50	0.49	0.53	0.59	0.67	0.74	0.77	0.86	0.97	1.00	1.11	1.09	1.03	1.02	1.03	0.96	0.94	0.92	0.85	0.78
9/13/2015	0.68	0.58	0.57	0.52	0.51	0.53	0.53	0.58	0.68	0.79	0.86	0.86	0.88	0.88	0.92	0.88	0.94	1.00	0.97	1.19	1.11	0.99	0.84	0.73
9/14/2015	0.61	0.54	0.50	0.48	0.48	0.53	0.60	0.61	0.62	0.62	0.69	0.67	0.70	0.65	0.70	0.74	0.83	0.89	0.91	0.94	1.00	0.87	0.73	0.63
9/15/2015	0.54	0.46	0.44	0.44	0.44	0.50	0.60	0.63	0.58	0.58	0.65	0.71	0.75	0.80	0.85	0.88	1.02	1.06	1.05	1.06	1.00	0.93	0.83	0.68
9/16/2015	0.57	0.53	0.47	0.46	0.47	0.53	0.62	0.69	0.62	0.66	0.70	0.76	0.84	0.88	0.95	0.99	1.08	1.12	1.14	1.18	1.13	1.01	0.93	0.75
9/17/2015	0.64	0.56	0.52	0.51	0.50	0.55	0.60	0.64	0.69	0.71	0.73	0.81	0.93	0.98	1.07	1.12	1.18	1.21	1.26	1.25	1.23	1.13	0.94	0.75
9/18/2015	0.63	0.60	0.57	0.55	0.56	0.59	0.66	0.71	0.75	0.71	0.76	0.81	0.84	0.86	0.97	1.01	1.05	1.09	1.08	1.08	1.07	0.97	0.84	0.76
9/19/2015	0.65	0.62	0.56	0.52	0.52	0.54	0.60	0.70	0.80	0.82	0.84	0.91	0.98	1.11	1.15	1.18	1.17	1.16	1.12	1.15	1.05	0.96	0.86	0.80
9/20/2015	0.69	0.62	0.59	0.56	0.56	0.57	0.60	0.75	0.81	0.84	0.96	1.00	1.06	1.14	1.19	1.16	1.13	1.05	0.98	0.97	1.01	0.92	0.78	0.65
9/21/2015	0.57	0.49	0.46	0.46	0.46	0.52	0.60	0.64	0.60	0.60	0.61	0.69	0.67	0.69	0.73	0.71	0.74	0.79	0.88	0.87	0.87	0.76	0.66	0.57
9/22/2015	0.51	0.46	0.41	0.40	0.41	0.50	0.59	0.67	0.65	0.59	0.60	0.64	0.63	0.61	0.64	0.71	0.75	0.84	0.83	0.93	0.85	0.82	0.73	0.61
9/23/2015	0.47	0.44	0.41	0.41	0.42	0.47	0.54	0.60	0.63	0.58	0.58	0.62	0.64	0.63	0.70	0.72	0.78	0.89	0.87	0.86	0.85	0.79	0.67	0.52
9/24/2015	0.45	0.42	0.38	0.39	0.41	0.47	0.56	0.56	0.56	0.59	0.62	0.59	0.62	0.64	0.62	0.68	0.81	0.78	0.83	0.93	0.91	0.82	0.66	0.56
9/25/2015	0.50	0.46	0.44	0.40	0.42	0.48	0.56	0.63	0.57	0.57	0.60	0.65	0.59	0.59	0.64	0.60	0.73	0.73	0.77	0.78	0.77	0.73	0.65	0.56
9/26/2015	0.48	0.43	0.40	0.39	0.40	0.42	0.46	0.60	0.65	0.68	0.78	0.84	0.81	0.79	0.84	0.81	0.77	0.80	0.87	0.84	0.78	0.70	0.65	0.58
9/27/2015	0.50	0.43	0.40	0.38	0.38	0.40	0.47	0.58	0.71	0.77	0.78	0.79	0.81	0.78	0.91	0.85	0.80	0.79	0.82	0.89	0.87	0.77	0.66	0.56
9/28/2015	0.47	0.42	0.40	0.40	0.41	0.46	0.54	0.59	0.55	0.56	0.61	0.65	0.67	0.71	0.72	0.74	0.81	0.89	0.96	1.00	0.97	0.86	0.74	0.63
9/29/2015	0.57	0.49	0.45	0.45	0.44	0.51	0.64	0.66	0.61	0.60	0.59	0.66	0.68	0.68	0.77	0.79	0.84	0.96	1.00	1.04	1.04	0.98	0.85	0.72
9/30/2015	0.64	0.58	0.55	0.54	0.55	0.62	0.69	0.74	0.78	0.76	0.80	0.78	0.81	0.75	0.76	0.79	0.89	1.02	0.98	1.00	0.97	0.83	0.71	0.63
10/1/2015	0.57	0.52	0.49	0.46	0.47	0.51	0.63	0.66	0.64	0.62	0.64	0.62	0.64	0.64	0.66	0.65	0.76	0.84	0.94	0.90	0.94	0.84	0.69	0.57
10/2/2015	0.51	0.45	0.42	0.42	0.43	0.48	0.62	0.67	0.72	0.68	0.69	0.70	0.75	0.71	0.70	0.73	0.87	0.88	0.92	1.01	0.95	0.87	0.76	0.63
10/3/2015	0.53	0.50	0.47	0.45	0.47	0.51	0.57	0.69	0.83	0.85	0.89	0.96	0.99	1.01	0.92	0.89	0.91	0.93	1.06	1.05	0.97	0.86	0.75	0.65
10/4/2015	0.56	0.51	0.48	0.44	0.45	0.45	0.49	0.65	0.79	0.89	0.90	0.88	0.85	0.87	0.89	0.84	0.89	0.92	0.89	1.04	0.97	0.85	0.73	0.61
10/5/2015	0.52	0.44	0.43	0.41	0.43	0.49	0.59	0.63	0.69	0.70	0.68	0.71	0.71	0.68	0.63	0.70	0.82	0.80	0.95	1.02	1.00	0.91	0.72	0.57
10/6/2015	0.46	0.45	0.43	0.44	0.44	0.53	0.66	0.76	0.71	0.59	0.65	0.60	0.57	0.60	0.57	0.57	0.68	0.84	0.96	1.00	0.93	0.79	0.66	0.52
10/7/2015	0.43	0.43	0.41	0.41	0.39	0.47	0.59	0.64	0.61	0.67	0.58	0.58	0.57	0.58	0.56	0.59	0.62	0.75	0.87	0.94	0.91	0.83	0.67	0.66
10/8/2015	0.48	0.43	0.39	0.39	0.41	0.45	0.61	0.58	0.59	0.68	0.60	0.63	0.58	0.56	0.60	0.60	0.62	0.82	0.89	0.95	0.92	0.82	0.63	0.54
10/9/2015	0.49	0.43	0.41	0.40	0.39	0.46	0.58	0.66	0.63	0.62	0.60	0.62	0.72	0.65	0.64	0.68	0.80	0.84	0.96	0.93	0.91	0.79	0.71	0.58
10/10/2015	0.50	0.44	0.42	0.42	0.41	0.42	0.48	0.62	0.76	0.81	0.74	0.78	0.73	0.80	0.75	0.83	0.82	0.85	0.89	0.86	0.81	0.73	0.69	0.66
10/11/2015	0.53	0.48	0.46	0.47	0.44	0.48	0.53	0.67	0.76	0.72	0.74	0.73	0.79	0.84	0.78	0.82	0.75	0.78	0.82	0.85	0.85	0.77	0.66	0.56
10/12/2015	0.50	0.47	0.43	0.43	0.44	0.46	0.54	0.56	0.68	0.80	0.85	0.74	0.80	0.79	0.76	0.82	0.83	0.91	1.06	1.01	0.93	0.85	0.72	0.58
10/13/2015	0.49	0.43	0.43	0.42	0.42	0.50	0.64	0.67	0.62	0.67	0.63	0.64	0.61	0.63	0.61	0.62	0.73	0.83	0.92	1.00	0.92	0.84	0.76	0.62
10/14/2015	0.49	0.45	0.43	0.44	0.43	0.49	0.57	0.56	0.58	0.54	0.55	0.57	0.60	0.60	0.65	0.63	0.71	0.82	0.90	0.97	0.92	0.81	0.61	0.52
10/15/2015	0.44	0.41	0.41	0.39	0.40	0.46	0.59	0.61	0.62	0.56	0.63	0.58	0.56	0.58	0.57	0.53	0.60	0.74	0.87	0.89	0.93	0.86	0.79	0.58
10/16/2015	0.48	0.44	0.41	0.40	0.41	0.50	0.61	0.62	0.58	0.57	0.56	0.56	0.53	0.54	0.55	0.64	0.65	0.75	0.84	1.00	0.87	0.84	0.67	0.60
10/17/2015	0.50	0.46	0.47	0.45	0.45	0.51	0.55	0.66	0.82	0.75	0.85	0.92	0.88	0.85	0.85	0.77	0.84	0.85	0.92	0.93	0.87	0.86	0.76	0.66
10/18/2015	0.62	0.57	0.52	0.53	0.54	0.60	0.62	0.72	0.83	0.94	0.84	0.85	0.86	0.85	1.05	0.98	0.92	1.01	1.09	1.04	1.13	0.99	0.97	0.71
10/19/2015	0.66	0.62	0.55	0.56	0.57	0.71	0.81	0.87	0.89	0.86	0.80	0.82	0.74	0.70	0.76	0.73	0.82	0.92	1.05	1.19	1.11	0.96	0.79	0.65
10/20/2015	0.54	0.51	0.49	0.49	0.52	0.61	0.68	0.72	0.67	0.70	0.67	0.58	0.60	0.59	0.51	0.55	0.69	0.76	0.90	0.95	0.91	0.81	0.68	0.53
10/21/2015	0.47	0.43	0.43	0.42	0.43	0.51	0.59	0.59	0.65	0.63	0.59	0.61	0.55	0.54	0.53	0.61	0.70	0.78	0.92	0.88	0.83	0.80	0.65	0.56
10/22/2015	0.48	0.42	0.42	0.39	0.42	0.50	0.57	0.64	0.59	0.61	0.63	0.62	0.61	0.59	0.57	0.60	0.67	0.76	0.84	0.87	0.91	0.84	0.72	0.56
10/23/2015	0.50	0.45	0.41	0.40	0.40	0.46	0.56	0.58	0.64	0.63	0.60	0.57	0.58	0.54	0.54	0.60	0.67	0.83	0.92	0.95	0.90	0.85	0.72	0.60
10/24/2015	0.56	0.56	0.51	0.50	0.49	0.52	0.58	0.67	0.85	0.84	0.78	0.82	0.80	0.83	0.78	0.84	0.84	0.88	0.91	0.90	0.85	0.83	0.74	0.61
10/25/2015	0.56	0.50	0.49	0.49	0.48	0.49	0.52	0.63	0.75	0.79	0.84	0.84	0.93	0.89	0.93	0.85	0.93	0.86	0.94	1.05	0.98	0.95	0.78	0.55
10/26/2015	0.50	0.47	0.46	0.44	0.47	0.55	0.67	0.70	0.67	0.62	0.65	0.62	0.71	0.60	0.63	0.60	0.70	0.86	1.01	1.03	1.03	0.91	0.78	0.63
10/27/2015	0.59	0.55	0.52	0.53	0.54	0.67	0.74	0.77	0.79	0.71	0.70	0.63	0.61	0.66	0.60	0.60	0.76	0.87	1.03	1.03	0.96	0.91	0.82	0.62
10/28/2015	0.53	0.48	0.50	0.48	0.50	0.56	0.69	0.75	0.78	0.69	0.64	0.68	0.68	0.71	0.71	0.77	0.83	0.96	1.03	1.10	1.03	0.89	0.66	0.56
10/29/2015	0.50	0.44	0.42	0.43	0.43	0.47	0.57	0.65	0.62	0.68	0.65	0.63	0.60	0.61	0.59	0.58	0.70	0.84	0.88	0.89	0.91	0.76	0.69	0.55
10/30/2015	0.49	0.46	0.43	0.41	0.44	0.51	0.58	0.73	0.67	0.64	0.62	0.59	0.61	0.65	0.62	0.67	0.71	0.79	0.97	0.92	0.95	0.87	0.78	0.63

10/31/2015	0.55	0.52	0.52	0.49	0.51	0.53	0.61	0.73	0.84	0.85	0.79	0.82	0.90	0.90	0.79	0.80	0.87	0.89	0.82	0.92	0.87	0.86	0.77	0.68
11/1/2015	0.52	0.46	0.43	0.44	0.43	0.46	0.53	0.68	0.84	0.85	0.82	0.91	0.85	0.93	0.91	0.86	0.93	0.98	0.98	0.96	0.88	0.75	0.63	0.55
11/2/2015	0.49	0.44	0.41	0.40	0.41	0.51	0.62	0.58	0.61	0.63	0.59	0.60	0.57	0.56	0.61	0.58	0.77	0.89	0.97	0.87	0.84	0.75	0.63	0.57
11/3/2015	0.48	0.45	0.43	0.43	0.44	0.51	0.63	0.63	0.64	0.64	0.58	0.58	0.58	0.58	0.52	0.55	0.67	0.93	0.88	0.86	0.81	0.69	0.65	0.54
11/4/2015	0.45	0.42	0.39	0.41	0.42	0.47	0.55	0.64	0.59	0.59	0.56	0.50	0.47	0.50	0.48	0.51	0.68	0.82	0.95	0.92	0.82	0.76	0.60	0.51
11/5/2015	0.46	0.42	0.40	0.40	0.40	0.47	0.54	0.58	0.59	0.56	0.58	0.54	0.56	0.60	0.53	0.56	0.75	0.84	0.88	0.92	0.77	0.73	0.58	0.51
11/6/2015	0.44	0.41	0.37	0.37	0.38	0.41	0.51	0.58	0.62	0.60	0.54	0.55	0.58	0.55	0.51	0.59	0.73	0.85	0.79	0.81	0.76	0.72	0.62	0.55
11/7/2015	0.44	0.40	0.39	0.37	0.39	0.39	0.45	0.55	0.72	0.67	0.67	0.75	0.71	0.67	0.68	0.67	0.81	0.90	0.82	0.82	0.78	0.75	0.63	0.54
11/8/2015	0.49	0.44	0.41	0.41	0.40	0.42	0.46	0.62	0.73	0.80	0.84	0.77	0.81	0.83	0.81	0.79	0.89	0.98	0.94	0.97	0.86	0.77	0.68	0.55
11/9/2015	0.50	0.44	0.43	0.46	0.47	0.56	0.63	0.69	0.64	0.58	0.56	0.59	0.58	0.58	0.59	0.65	0.82	0.99	0.94	1.02	0.94	0.79	0.68	0.57
11/10/2015	0.49	0.46	0.43	0.43	0.44	0.55	0.65	0.67	0.63	0.61	0.58	0.60	0.58	0.64	0.63	0.69	0.85	0.94	0.91	0.92	0.89	0.78	0.72	0.62
11/11/2015	0.52	0.48	0.44	0.45	0.46	0.51	0.53	0.59	0.72	0.82	0.82	0.75	0.82	0.82	0.76	0.81	0.93	1.02	0.99	1.01	0.94	0.79	0.69	0.57
11/12/2015	0.51	0.47	0.44	0.44	0.45	0.54	0.61	0.66	0.70	0.62	0.61	0.63	0.64	0.63	0.70	0.67	0.81	0.95	0.98	1.01	0.93	0.85	0.68	0.55
11/13/2015	0.50	0.48	0.43	0.44	0.48	0.53	0.63	0.65	0.67	0.59	0.55	0.53	0.52	0.50	0.52	0.60	0.76	0.91	0.89	0.89	0.89	0.78	0.68	0.66
11/14/2015	0.55	0.51	0.52	0.50	0.50	0.53	0.58	0.66	0.81	0.75	0.77	0.81	0.83	0.84	0.85	0.89	0.98	1.04	1.02	0.96	0.95	0.89	0.86	0.73
11/15/2015	0.61	0.56	0.54	0.54	0.55	0.59	0.62	0.75	0.83	0.84	0.83	0.85	0.85	0.81	0.85	0.83	0.94	0.96	0.99	0.98	0.96	0.83	0.71	0.58
11/16/2015	0.53	0.52	0.48	0.46	0.49	0.57	0.64	0.70	0.68	0.60	0.54	0.59	0.60	0.54	0.65	0.72	0.83	0.94	0.99	1.00	0.96	0.93	0.73	0.62
11/17/2015	0.53	0.52	0.52	0.51	0.54	0.65	0.77	0.81	0.74	0.65	0.60	0.60	0.62	0.53	0.55	0.60	0.81	0.99	1.06	1.05	1.04	0.92	0.79	0.67
11/18/2015	0.61	0.61	0.59	0.60	0.62	0.72	0.79	0.83	0.82	0.73	0.69	0.69	0.66	0.64	0.60	0.72	0.92	1.03	1.01	1.06	1.03	0.93	0.83	0.68
11/19/2015	0.58	0.58	0.55	0.56	0.58	0.65	0.71	0.71	0.72	0.67	0.68	0.72	0.61	0.62	0.65	0.70	0.82	1.02	0.99	0.95	0.91	0.81	0.67	0.56
11/20/2015	0.51	0.49	0.45	0.46	0.45	0.55	0.62	0.63	0.64	0.60	0.55	0.54	0.57	0.56	0.59	0.60	0.77	0.96	0.92	0.90	0.91	0.81	0.76	0.73
11/21/2015	0.56	0.51	0.53	0.52	0.54	0.55	0.60	0.78	0.81	0.84	0.82	0.77	0.79	0.72	0.77	0.83	0.93	0.98	1.01	1.03	0.92	0.86	0.80	0.74
11/22/2015	0.61	0.56	0.54	0.52	0.55	0.55	0.58	0.69	0.80	0.90	0.94	0.99	0.96	1.00	1.01	0.99	1.09	1.09	1.06	1.11	1.00	0.85	0.76	0.62
11/23/2015	0.60	0.54	0.56	0.57	0.58	0.67	0.76	0.77	0.81	0.71	0.65	0.72	0.72	0.67	0.66	0.72	0.95	1.06	1.16	1.12	1.04	1.02	0.91	0.78
11/24/2015	0.71	0.67	0.67	0.64	0.66	0.75	0.87	0.86	0.84	0.79	0.75	0.77	0.76	0.70	0.69	0.68	0.92	1.17	1.13	1.14	1.13	1.00	0.93	0.79
11/25/2015	0.74	0.68	0.65	0.64	0.67	0.74	0.90	0.95	0.93	0.83	0.83	0.76	0.74	0.71	0.73	0.80	0.96	1.15	1.13	1.11	1.04	1.02	0.89	0.75
11/26/2015	0.67	0.59	0.59	0.59	0.58	0.62	0.70	0.86	0.98	1.11	1.17	1.18	1.08	1.06	0.84	0.79	0.82	0.83	0.85	0.85	0.84	0.80	0.72	0.59
11/27/2015	0.54	0.53	0.50	0.49	0.49	0.53	0.54	0.64	0.70	0.72	0.69	0.72	0.70	0.64	0.60	0.62	0.77	0.89	0.98	0.80	0.85	0.74	0.65	0.55
11/28/2015	0.53	0.49	0.45	0.44	0.44	0.46	0.49	0.63	0.78	0.80	0.81	0.97	0.91	0.90	0.97	0.93	0.89	0.98	1.01	0.97	0.86	0.84	0.74	0.70
11/29/2015	0.58	0.54	0.53	0.49	0.49	0.51	0.57	0.67	0.84	0.95	0.88	0.77	0.82	0.80	0.78	0.81	0.94	1.06	1.03	1.10	1.18	0.97	0.85	0.73
11/30/2015	0.65	0.59	0.59	0.60	0.61	0.70	0.84	0.81	0.76	0.76	0.74	0.72	0.72	0.73	0.77	0.81	1.01	1.16	1.20	1.24	1.08	0.93	0.82	0.73
12/1/2015	0.64	0.61	0.59	0.62	0.64	0.70	0.80	0.92	0.84	0.78	0.73	0.73	0.74	0.76	0.75	0.83	1.05	1.16	1.22	1.16	1.11	1.01	0.83	0.68
12/2/2015	0.62	0.61	0.58	0.58	0.55	0.60	0.77	0.77	0.76	0.79	0.73	0.70	0.77	0.76	0.74	0.86	0.99	1.05	1.04	1.10	1.01	1.00	0.81	0.69
12/3/2015	0.58	0.53	0.50	0.48	0.52	0.58	0.71	0.75	0.71	0.68	0.65	0.70	0.69	0.60	0.65	0.68	0.88	1.06	1.04	1.14	1.10	1.02	0.88	0.69
12/4/2015	0.64	0.57	0.55	0.56	0.57	0.66	0.86	0.84	0.82	0.72	0.65	0.61	0.66	0.63	0.66	0.69	0.84	1.00	0.95	1.00	1.02	0.95	0.87	0.74
12/5/2015	0.67	0.61	0.58	0.59	0.58	0.64	0.70	0.82	0.93	0.88	0.83	0.87	0.88	0.82	0.86	0.79	0.95	1.14	1.11	1.09	0.99	0.89	0.86	0.81
12/6/2015	0.66	0.64	0.61	0.60	0.60	0.63	0.68	0.83	0.94	0.93	0.94	0.90	0.89	0.84	0.80	0.88	1.14	1.20	1.26	1.19	1.13	1.00	0.92	0.69
12/7/2015	0.61	0.59	0.55	0.55	0.60	0.71	0.82	0.82	0.78	0.68	0.66	0.70	0.66	0.65	0.77	0.74	0.91	1.11	1.11	1.12	1.07	0.94	0.78	0.65
12/8/2015	0.59	0.54	0.53	0.52	0.54	0.64	0.75	0.80	0.78	0.76	0.78	0.74	0.78	0.74	0.76	0.89	1.01	1.14	1.21	1.16	1.16	1.01	0.93	0.76
12/9/2015	0.67	0.59	0.56	0.58	0.59	0.67	0.79	0.80	0.78	0.72	0.67	0.66	0.73	0.72	0.72	0.77	0.96	1.11	1.16	1.13	1.13	0.99	0.86	0.70
12/10/2015	0.58	0.54	0.52	0.54	0.55	0.64	0.70	0.74	0.74	0.74	0.70	0.70	0.59	0.56	0.60	0.64	0.80	0.99	1.05	1.06	0.98	0.92	0.79	0.62
12/11/2015	0.54	0.52	0.48	0.50	0.50	0.58	0.73	0.73	0.67	0.66	0.62	0.63	0.67	0.63	0.63	0.67	0.83	1.06	1.08	1.04	0.92	0.93	0.78	0.66
12/12/2015	0.57	0.50	0.49	0.48	0.49	0.51	0.58	0.66	0.85	0.78	0.79	0.79	0.80	0.74	0.78	0.78	0.82	1.01	0.99	0.92	0.94	0.88	0.79	0.69
12/13/2015	0.57	0.52	0.50	0.50	0.50	0.51	0.55	0.67	0.78	0.83	0.81	0.82	0.88	0.92	0.91	0.96	1.12	1.21	1.26	1.11	1.12	1.06	0.88	0.66
12/14/2015	0.56	0.50	0.48	0.49	0.51	0.59	0.72	0.72	0.73	0.65	0.65	0.75	0.72	0.71	0.71	0.78	0.98	1.13	1.11	1.13	1.07	0.94	0.79	0.63
12/15/2015	0.54	0.49	0.44	0.43	0.44	0.53	0.67	0.69	0.66	0.66	0.56	0.61	0.63	0.56	0.59	0.68	0.90	1.06	1.12	1.11	1.05	0.94	0.81	0.67
12/16/2015	0.55	0.53	0.49	0.50	0.51	0.59	0.70	0.78	0.78	0.73	0.71	0.68	0.65	0.65	0.64	0.76	0.93	1.09	1.16	1.19	1.12	1.03	0.80	0.66
12/17/2015	0.59	0.56	0.53	0.53	0.56	0.63	0.78	0.81	0.77	0.73	0.77	0.73	0.73	0.67	0.69	0.73	0.90	1.02	1.10	1.11	1.10	0.95	0.83	0.64
12/18/2015	0.55	0.51	0.50	0.49	0.48	0.59	0.67	0.74	0.73	0.77	0.70	0.73	0.74	0.73	0.76	0.84	0.95	1.08	1.06	1.13	1.06	1.01	0.89	0.77
12/19/2015	0.68	0.62	0.60	0.62	0.65	0.65	0.71	0.89	0.96	1.01	1.03	1.04	1.03	1.07	0.99	1.04	1.17	1.25	1.24	1.17	1.18	1.12	1.06	0.89
12/20/2015	0.80	0.71	0.68	0.68	0.68	0.73	0.74	0.83	0.93	0.92	1.06	0.99	0.97	1.04	0.95	0.91	1.08	1.20	1.22	1.31	1.32	1.18	0.98	0.76
12/21/2015	0.69	0.67	0.62	0.64	0.65	0.74	0.82	0.94	0.90	0.85	0.84	0.84	0.76	0.78	0.83	0.88	1.06	1.20	1.26	1.16	1.11	1.07	0.86	0.68
12/22/2015	0.57	0.54	0.52	0.49	0.51	0.59	0.68	0.75	0.73	0.76	0.75	0.77	0.76	0.73	0.73	0.78	0.91	1.04	1.12	1.06	1.10	1.06	0.84	0.70
12/23/2015	0.58	0.50	0.45	0.46	0.49	0.55	0.63	0.73	0.76	0.78	0.75	0.74	0.76	0.71	0.69	0.72	0.97	1.08	1.22	1.14	1.12	1.08	0.96	0.75
12/24/2015	0.60	0.53	0.49	0.46	0.48	0.54	0.57	0.69	0.77	0.85	0.87	0.85	0.93	0.93	0.96	1.02	1.03	1.08	1.11	1.02	0.93	0.85	0.77	0.69
12/25/2015	0.59	0.50	0.45	0.44	0.44	0.47	0.51	0.68	0.89	0.96	1.03	0.98	0.94	0.85	0.84	0.76	0.89	0.91	0.91	0.91	0.93	0.85	0.73	0.60
12/26/2015	0.51	0.48	0.45	0.43	0.43	0.47	0.51	0.61	0.76	0.84	0.85	0.88	0.84	0.85	0.76	0.85	0.98	1.03	1.06	1.06	0.92	0.88	0.87	0.73
12/27/2015	0.62	0.52	0.51	0.51	0.47	0.51	0.51	0.63	0.71	0.84	0.90	0.94	0.93	0.93	0.89	0.90	0.98	0.99	1.03	1.04	0.99	0.92	0.79	0.65
12/28/2015	0.55	0.51	0.49	0.51	0.54	0.59	0.68	0.73	0.78	0.80	0.82	0.84	0.83	0.82	0.82	0.88	1.04	1.25	1.28	1.23	1.17	1.14	0.95	0.83
12/29/2015	0.71	0.68	0.65	0.65	0.68	0.72	0.77	0.82	0.90	0.90	1.00	0.97	1.06	1.03	0.98	0.91	1.12	1.13	1.22	1.23	1.18	1.05	0.92	0.81
12/30/2015	0.72	0.68	0.67	0.69	0.68	0.72	0.77	0.82	0.86	0.87	0.94	0.87	0.87	0.95	0.91	0.96	1.08	1.18	1.23	1.17	1.10	1.02	0.94	0.73
12/31/2015	0.63	0.64	0.59	0.56	0.58	0.65	0.70	0.74	0.90	0.84	0.80	0.79	0.80	0.81	0.80	0.88	0.95	1.10	1.12	1.05	0.95	0.95	0.90	0.84
1/1/2016	0.71	0.65	0.59	0.59	0.58	0.60	0.58	0.64	0.74	0.86	0.94	0.92	0.96	0.97	1.01	0.98	1.10	1.06	1.09	1.02	1.01	0.97	0.85	0.75
1/2/2016	0.68	0.64	0.65	0.64	0.63	0.68	0.70	0.82	0.88	0.86	0.97	0.94	0.90	0.87	0.84	0.91	0.97	1.11	1.06	1.13	1.10	0.97	0.84	0.77
1/3/2016	0.71	0.66	0.64	0.64	0.61	0.63	0.66	0.71	0.86	0.94	0.92	0.96	0.95	0.89	0.90	0.84	0.96	1.02	1.12	1.12	1.04	0.98	0.83	0.71
1/4/2016	0.61	0.62	0.62	0.62	0.64	0.69	0.80	0.84	0.81	0.84	0.85	0.82	0.81	0.76	0.88	0.94	1.04	1.27	1.25	1.25	1.22	1.12	0.95	0.87
1/5/2016	0.83	0.80	0.80	0.80	0.85	0.89	1.03	1.06	1.02	0.93	0.89	0.90	0.92	0.86	0.82	0.85	0.97	1.17	1.25	1.26	1.23	1.10	1.08	0.92
1/6/2016	0.84	0.83	0.81	0.80	0.82	0.90	1.00	1.02	0.96	0.87	0.90	0.82	0.76	0.73	0.74	0.80	0.97	1.13	1.18	1.18	1.12	1.10	0.90	0.79
1/7/2016	0.73	0.72	0.69	0.69	0.71	0.78	0.88	0.89	0.87	0.81	0.76	0.76	0.72	0.72	0.72	0.72	0.91	1.06	1.14	1.08	1.11	1.02	0.97	0.84
1/8/2016	0.72	0.69	0.65	0.68	0.68	0.76	0.85	0.89	0.82	0.81	0.80	0.76	0.79	0.74	0.74	0.75	0.91	1.05	1.05	1.02	1.02	0.90	0.74	0.69
1/9/2016	0.62	0.60	0.58	0.58	0.59	0.62	0.64	0.69	0.78	0.90	0.96	1.02	0.98	0.96	0.84	0.86	1.02	1.04	1.03	1.10	1.04	0.93	0.80	0.76
1/10/2016	0.68	0.59	0.54	0.54	0.56	0.57	0.58	0.68	0.85	0.85	0.89	0.95	0.97	1.01	0.98	0.93	0.98	1.12	1.15	1.00	0.92	0.82	0.75	0.61
1/11/2016	0.55	0.52	0.52	0.50	0.54	0.62	0.76	0.77	0.73	0.67	0.70	0.64	0.64	0.70	0.69	0.76	0.86	1.02	1.04	1.03	1.04	0.92	0.87	0.77
1/12/2016	0.71	0.68	0.68	0.67	0.71	0.78	0.90	0.90	0.88	0.85	0.80	0.75	0.77	0.74	0.74	0.83	0.95	1.03	1.06	1.03	1.02	0.92	0.80	0.76

1/13/2016	0.68	0.66	0.66	0.66	0.71	0.77	0.89	0.89	0.88	0.83	0.88	0.81	0.82	0.81	0.80	0.85	0.98	1.16	1.23	1.21	1.14	1.13	0.96	0.80
1/14/2016	0.78	0.77	0.75	0.75	0.76	0.85	0.94	0.94	0.92	0.93	0.87	0.82	0.83	0.79	0.74	0.82	0.88	1.10	1.13	1.14	1.09	1.08	0.92	0.76
1/15/2016	0.68	0.69	0.68	0.67	0.67	0.74	0.83	0.84	0.84	0.79	0.72	0.72	0.73	0.70	0.70	0.74	0.89	0.98	0.99	1.01	1.00	0.95	0.84	0.74
1/16/2016	0.66	0.59	0.59	0.60	0.59	0.60	0.64	0.73	0.87	0.92	0.98	0.93	0.99	0.94	0.88	0.86	0.97	1.01	0.99	0.98	0.91	0.83	0.76	0.70
1/17/2016	0.65	0.60	0.57	0.57	0.57	0.57	0.62	0.70	0.86	0.92	0.90	0.96	1.02	0.99	0.96	0.98	1.07	1.10	1.09	1.10	1.05	0.98	0.84	0.79
1/18/2016	0.70	0.65	0.62	0.63	0.64	0.67	0.74	0.82	0.85	0.89	0.95	0.99	1.10	1.06	1.06	0.91	1.15	1.34	1.41	1.38	1.33	1.23	1.03	0.93
1/19/2016	0.86	0.80	0.81	0.82	0.82	0.92	1.03	1.01	1.00	0.95	0.89	0.90	0.93	0.91	0.90	0.93	1.08	1.27	1.32	1.34	1.26	1.14	0.99	0.87
1/20/2016	0.80	0.78	0.77	0.75	0.78	0.86	0.98	0.95	0.96	0.91	0.85	0.85	0.82	0.75	0.82	0.88	0.93	1.19	1.16	1.23	1.08	1.01	0.88	0.75
1/21/2016	0.72	0.73	0.75	0.71	0.71	0.79	0.91	0.89	0.91	0.90	0.83	0.77	0.78	0.77	0.71	0.79	0.96	1.09	1.17	1.18	1.15	1.06	0.98	0.84
1/22/2016	0.74	0.73	0.74	0.73	0.77	0.83	0.99	0.97	0.91	0.85	0.84	0.83	0.78	0.83	0.85	0.81	0.97	1.11	1.15	1.07	1.09	1.00	0.88	0.83
1/23/2016	0.74	0.71	0.73	0.72	0.73	0.74	0.78	0.89	0.96	1.02	1.03	1.12	1.23	1.08	1.15	1.12	1.26	1.21	1.18	1.22	1.21	1.13	1.02	0.91
1/24/2016	0.83	0.77	0.77	0.77	0.75	0.78	0.82	0.91	1.00	1.02	1.01	0.99	1.04	1.07	0.99	0.92	1.01	1.09	1.14	1.22	1.16	1.05	0.93	0.83
1/25/2016	0.72	0.70	0.65	0.67	0.69	0.75	0.91	0.89	0.82	0.77	0.77	0.78	0.74	0.72	0.74	0.72	0.85	1.07	1.14	1.14	1.15	1.00	0.89	0.74
1/26/2016	0.68	0.69	0.65	0.65	0.67	0.73	0.84	0.87	0.75	0.80	0.75	0.67	0.65	0.62	0.65	0.61	0.79	0.93	1.01	0.96	0.97	0.85	0.67	0.62
1/27/2016	0.57	0.54	0.54	0.52	0.54	0.65	0.73	0.79	0.71	0.71	0.71	0.69	0.69	0.63	0.60	0.64	0.79	0.99	1.00	0.98	1.05	0.96	0.86	0.78
1/28/2016	0.68	0.67	0.66	0.67	0.67	0.76	0.91	0.94	0.87	0.79	0.69	0.70	0.70	0.67	0.62	0.61	0.77	0.94	0.98	1.02	1.02	0.96	0.87	0.74
1/29/2016	0.67	0.62	0.63	0.61	0.62	0.68	0.84	0.91	0.82	0.77	0.72	0.68	0.71	0.71	0.70	0.73	0.81	0.94	0.97	1.00	0.98	0.96	0.88	0.77
1/30/2016	0.69	0.65	0.64	0.63	0.64	0.67	0.71	0.86	0.90	0.85	0.90	0.91	0.83	0.81	0.79	0.84	0.97	1.05	1.00	1.03	0.98	0.88	0.76	0.72
1/31/2016	0.67	0.64	0.59	0.60	0.59	0.61	0.64	0.72	0.83	0.90	0.88	0.86	0.85	0.86	0.80	0.76	0.88	0.98	1.04	1.09	0.98	0.85	0.76	0.68
2/1/2016	0.54	0.52	0.50	0.49	0.51	0.59	0.72	0.75	0.67	0.63	0.59	0.56	0.58	0.53	0.56	0.59	0.77	0.88	0.96	0.92	0.92	0.76	0.69	0.55
2/2/2016	0.52	0.51	0.49	0.51	0.53	0.58	0.76	0.75	0.69	0.67	0.61	0.57	0.58	0.54	0.53	0.61	0.73	0.92	1.01	1.03	0.95	0.84	0.78	0.65
2/3/2016	0.58	0.55	0.54	0.55	0.57	0.66	0.80	0.74	0.73	0.70	0.70	0.68	0.64	0.61	0.71	0.72	0.86	0.97	0.94	0.97	0.92	0.78	0.72	0.60
2/4/2016	0.50	0.50	0.47	0.43	0.46	0.53	0.65	0.64	0.63	0.56	0.57	0.56	0.58	0.52	0.51	0.56	0.72	0.79	0.88	0.85	0.80	0.75	0.70	0.57
2/5/2016	0.54	0.53	0.50	0.49	0.52	0.59	0.67	0.75	0.80	0.82	0.86	0.89	0.89	0.91	0.88	0.86	0.93	1.05	1.04	1.01	1.04	0.91	0.86	0.74
2/6/2016	0.66	0.62	0.61	0.61	0.63	0.67	0.68	0.78	0.82	0.89	0.96	0.87	0.85	0.84	0.74	0.77	0.89	1.00	1.00	0.98	0.90	0.88	0.85	0.75
2/7/2016	0.68	0.63	0.63	0.64	0.63	0.65	0.67	0.80	0.88	0.96	0.97	0.85	0.87	0.91	0.89	0.92	0.98	1.08	1.01	1.00	0.97	0.95	0.87	0.73
2/8/2016	0.63	0.64	0.59	0.58	0.62	0.65	0.77	0.84	0.82	0.89	0.93	1.04	1.05	0.99	0.99	1.05	1.12	1.24	1.25	1.19	1.15	1.01	0.92	0.81
2/9/2016	0.77	0.70	0.68	0.70	0.68	0.79	0.89	0.91	0.80	0.78	0.80	0.80	0.78	0.74	0.73	0.79	0.96	1.14	1.06	1.07	1.10	1.03	0.89	0.77
2/10/2016	0.70	0.69	0.65	0.64	0.69	0.75	0.87	0.83	0.77	0.80	0.82	0.79	0.72	0.71	0.71	0.74	0.86	0.98	1.02	1.07	1.07	0.95	0.88	0.75
2/11/2016	0.66	0.63	0.62	0.65	0.67	0.73	0.90	0.84	0.88	0.79	0.74	0.76	0.78	0.77	0.78	0.81	1.00	1.13	1.18	1.29	1.20	1.14	1.03	0.93
2/12/2016	0.87	0.83	0.81	0.83	0.82	0.92	1.04	1.01	0.99	0.96	0.86	0.82	0.82	0.84	0.85	0.84	1.01	1.12	1.13	1.19	1.13	1.09	0.96	0.90
2/13/2016	0.79	0.80	0.75	0.74	0.75	0.76	0.82	0.94	1.04	1.01	1.04	1.04	1.05	0.97	0.99	1.05	1.09	1.21	1.42	1.45	1.35	1.27	1.17	1.14
2/14/2016	1.07	1.04	1.04	1.06	1.05	1.06	1.11	1.23	1.29	1.28	1.30	1.20	1.24	1.15	1.14	1.10	1.14	1.27	1.29	1.38	1.31	1.18	1.12	1.03
2/15/2016	0.98	0.96	0.96	0.93	0.95	1.00	1.08	1.16	1.12	1.07	1.05	1.05	1.01	1.07	1.05	1.09	1.24	1.25	1.24	1.32	1.21	1.12	0.95	0.82
2/16/2016	0.74	0.68	0.66	0.63	0.64	0.68	0.77	0.77	0.81	0.78	0.79	0.79	0.82	0.76	0.76	0.79	0.93	1.00	1.00	0.96	0.89	0.80	0.71	0.61
2/17/2016	0.57	0.54	0.54	0.55	0.57	0.62	0.72	0.75	0.75	0.73	0.68	0.70	0.63	0.60	0.63	0.66	0.79	0.93	0.95	0.99	1.00	0.97	0.83	0.70
2/18/2016	0.63	0.59	0.60	0.61	0.62	0.73	0.84	0.84	0.81	0.75	0.80	0.77	0.76	0.66	0.63	0.64	0.78	0.90	1.01	1.06	0.99	0.99	0.88	0.76
2/19/2016	0.70	0.67	0.69	0.67	0.72	0.79	0.87	0.90	0.87	0.83	0.79	0.76	0.70	0.66	0.72	0.75	0.83	0.98	1.05	1.09	1.00	0.92	0.82	0.74
2/20/2016	0.70	0.65	0.61	0.60	0.59	0.60	0.66	0.78	0.92	0.86	0.84	0.85	0.85	0.86	0.82	0.73	0.82	0.88	0.89	0.83	0.82	0.75	0.71	0.69
2/21/2016	0.57	0.53	0.53	0.54	0.54	0.56	0.61	0.68	0.75	0.77	0.76	0.87	0.82	0.84	0.77	0.80	0.80	0.86	0.99	0.94	0.94	0.91	0.74	0.64
2/22/2016	0.55	0.51	0.52	0.51	0.53	0.59	0.75	0.74	0.66	0.63	0.60	0.62	0.61	0.54	0.56	0.65	0.69	0.88	0.97	1.01	0.97	0.86	0.69	0.60
2/23/2016	0.56	0.54	0.53	0.55	0.56	0.67	0.82	0.82	0.79	0.75	0.71	0.72	0.69	0.73	0.78	0.81	0.90	0.97	1.01	1.08	0.98	0.92	0.77	0.67
2/24/2016	0.62	0.61	0.57	0.58	0.60	0.65	0.74	0.80	0.74	0.70	0.69	0.74	0.68	0.66	0.73	0.74	0.88	0.95	1.02	0.92	0.92	0.82	0.67	0.57
2/25/2016	0.52	0.48	0.46	0.44	0.44	0.47	0.60	0.66	0.65	0.59	0.54	0.58	0.60	0.59	0.55	0.59	0.69	0.81	0.91	0.97	0.96	0.88	0.75	0.63
2/26/2016	0.57	0.55	0.57	0.57	0.59	0.68	0.76	0.76	0.74	0.68	0.66	0.63	0.66	0.62	0.65	0.67	0.71	0.82	0.97	0.99	1.02	0.98	0.94	0.82
2/27/2016	0.76	0.70	0.66	0.69	0.70	0.74	0.81	0.91	0.92	0.93	0.96	0.95	0.85	0.85	0.82	0.84	0.84	1.02	1.08	1.04	0.96	0.95	0.86	0.77
2/28/2016	0.65	0.62	0.60	0.62	0.62	0.62	0.66	0.74	0.85	0.89	0.83	0.75	0.74	0.75	0.73	0.76	0.82	0.88	0.95	1.04	0.97	0.83	0.77	0.63
2/29/2016	0.54	0.52	0.52	0.51	0.56	0.61	0.70	0.71	0.64	0.64	0.62	0.62	0.61	0.58	0.64	0.58	0.71	0.81	0.94	0.94	0.94	0.87	0.71	0.59
3/1/2016	0.55	0.52	0.51	0.52	0.52	0.61	0.75	0.73	0.67	0.65	0.61	0.56	0.56	0.57	0.57	0.63	0.70	0.83	0.90	1.02	0.94	0.90	0.79	0.65
3/2/2016	0.58	0.54	0.49	0.50	0.49	0.56	0.68	0.71	0.66	0.62	0.64	0.61	0.57	0.55	0.59	0.62	0.72	0.92	1.06	1.09	0.98	0.93	0.87	0.81
3/3/2016	0.72	0.67	0.65	0.66	0.68	0.78	0.89	0.88	0.83	0.82	0.76	0.73	0.68	0.67	0.66	0.67	0.73	0.91	1.05	1.05	1.12	0.98	0.86	0.79
3/4/2016	0.69	0.68	0.66	0.64	0.64	0.71	0.81	0.83	0.81	0.74	0.79	0.77	0.77	0.74	0.81	0.83	0.90	0.99	1.11	1.07	1.01	0.95	0.92	0.84
3/5/2016	0.75	0.71	0.72	0.72	0.73	0.75	0.78	0.90	0.93	0.99	1.05	0.92	0.95	0.89	0.86	0.97	0.94	0.90	0.99	0.90	0.97	0.95	0.89	0.77
3/6/2016	0.67	0.63	0.65	0.61	0.61	0.65	0.70	0.79	0.90	1.00	0.90	0.86	0.88	0.90	0.78	0.76	0.82	0.87	0.99	1.05	1.01	1.00	0.80	0.77
3/7/2016	0.65	0.62	0.60	0.61	0.65	0.70	0.82	0.84	0.72	0.75	0.72	0.70	0.71	0.64	0.61	0.66	0.72	0.86	0.98	1.01	0.94	0.88	0.71	0.63
3/8/2016	0.58	0.54	0.51	0.52	0.55	0.64	0.78	0.75	0.67	0.59	0.63	0.63	0.58	0.53	0.51	0.54	0.62	0.72	0.86	0.88	0.93	0.83	0.70	0.59
3/9/2016	0.57	0.52	0.49	0.50	0.53	0.61	0.72	0.73	0.67	0.67	0.60	0.61	0.56	0.61	0.55	0.58	0.56	0.69	0.81	0.93	0.83	0.81	0.61	0.51
3/10/2016	0.46	0.44	0.42	0.42	0.42	0.49	0.62	0.59	0.59	0.55	0.52	0.57	0.53	0.53	0.54	0.56	0.65	0.82	0.94	0.89	0.83	0.73	0.60	0.54
3/11/2016	0.45	0.43	0.40	0.40	0.41	0.47	0.61	0.66	0.64	0.62	0.55	0.56	0.54	0.54	0.51	0.56	0.60	0.71	0.73	0.80	0.77	0.75	0.65	0.61
3/12/2016	0.50	0.49	0.46	0.47	0.46	0.49	0.55	0.66	0.81	0.81	0.74	0.72	0.75	0.69	0.69	0.63	0.68	0.75	0.79	0.83	0.86	0.81	0.67	0.62
3/13/2016	0.53	0.47	0.00	0.48	0.47	0.44	0.49	0.55	0.61	0.64	0.72	0.71	0.73	0.70	0.70	0.68	0.64	0.69	0.77	0.88	0.93	0.86	0.65	0.57
3/14/2016	0.49	0.48	0.43	0.41	0.44	0.51	0.69	0.67	0.62	0.65	0.64	0.62	0.71	0.67	0.73	0.70	0.78	0.96	0.96	1.03	0.99	0.93	0.77	0.62
3/15/2016	0.54	0.51	0.50	0.49	0.49	0.55	0.67	0.69	0.69	0.65	0.62	0.65	0.66	0.66	0.64	0.67	0.75	0.85	0.87	0.90	0.90	0.82	0.70	0.60
3/16/2016	0.55	0.52	0.48	0.47	0.48	0.57	0.69	0.70	0.65	0.65	0.55	0.54	0.55	0.50	0.55	0.57	0.60	0.66	0.75	0.87	0.88	0.88	0.72	0.57
3/17/2016	0.50	0.46	0.45	0.45	0.46	0.51	0.63	0.66	0.62	0.63	0.61	0.52	0.54	0.51	0.55	0.54	0.58	0.66	0.73	0.84	0.81	0.76	0.67	0.59
3/18/2016	0.49	0.47	0.46	0.48	0.49	0.54	0.70	0.64	0.65	0.63	0.57	0.59	0.62	0.62	0.63	0.60	0.65	0.80	0.77	0.80	0.96	0.85	0.84	0.72
3/19/2016	0.63	0.56	0.54	0.54	0.52	0.58	0.63	0.71	0.87	0.85	0.81	0.76	0.77	0.77	0.68	0.77	0.75	0.81	0.90	1.04	0.96	0.86	0.75	0.70
3/20/2016	0.66	0.59	0.58	0.58	0.59	0.61	0.67	0.79	0.88	0.90	0.91	0.88	0.84	0.78	0.83	0.84	0.83	0.87	1.02	1.00	0.99	0.92	0.82	0.68
3/21/2016	0.63	0.57	0.57	0.57	0.60	0.63	0.68	0.70	0.77	0.80	0.90	0.96	0.83	0.74	0.75	0.74	0.82	0.90	0.95	1.02	1.00	0.90	0.79	0.70
3/22/2016	0.64	0.61	0.61	0.58	0.61	0.67	0.78	0.78	0.71	0.70	0.74	0.64	0.67	0.60	0.57	0.59	0.64	0.76	0.84	0.91	0.86	0.81	0.64	0.58
3/23/2016	0.58	0.54	0.51	0.52	0.50	0.56	0.66	0.67	0.64	0.64	0.64	0.60	0.58	0.56	0.56	0.57	0.62	0.71	0.81	0.90	0.86	0.77	0.64	0.53
3/24/2016	0.48	0.42	0.41	0.42	0.43	0.52	0.62	0.66	0.67	0.65	0.61	0.61	0.66	0.67	0.66	0.60	0.68	0.83	0.90	0.94	0.94	0.89	0.80	0.66
3/25/2016	0.57	0.50	0.49	0.51	0.47	0.56	0.63	0.72	0.68	0.67	0.70	0.84	0.79	0.78	0.74	0.71	0.72	0.73	0.84	0.91	0.88	0.88	0.72	0.61
3/26/2016	0.50	0.46	0.51	0.48	0.52	0.54	0.56	0.70	0.80	0.84	0.83	0.85	0.85	0.81	0.74	0.66	0.75	0.83	0.80	0.90	0.94	0.86	0.79	0.74

3/27/2016	0.65	0.59	0.58	0.56	0.59	0.59	0.65	0.74	0.86	0.98	0.96	0.91	0.82	0.79	0.67	0.67	0.67	0.74	0.82	0.88	0.88	0.90	0.71	0.64
3/28/2016	0.52	0.54	0.50	0.51	0.54	0.61	0.71	0.73	0.71	0.73	0.74	0.79	0.80	0.76	0.68	0.70	0.74	0.87	0.92	0.94	0.94	0.76	0.68	0.61
3/29/2016	0.55	0.53	0.49	0.50	0.51	0.62	0.75	0.75	0.66	0.64	0.58	0.58	0.59	0.59	0.56	0.61	0.64	0.72	0.78	0.88	0.88	0.80	0.72	0.62
3/30/2016	0.57	0.53	0.54	0.55	0.58	0.67	0.75	0.74	0.67	0.62	0.59	0.62	0.60	0.59	0.54	0.53	0.57	0.74	0.79	0.89	0.95	0.88	0.77	0.60
3/31/2016	0.55	0.48	0.48	0.50	0.48	0.57	0.68	0.65	0.60	0.59	0.54	0.53	0.55	0.52	0.53	0.53	0.59	0.70	0.78	0.81	0.80	0.71	0.62	0.52
4/1/2016	0.43	0.39	0.36	0.36	0.37	0.45	0.59	0.60	0.57	0.61	0.60	0.61	0.60	0.59	0.57	0.60	0.64	0.74	0.81	0.85	0.75	0.68	0.64	0.55
4/2/2016	0.47	0.43	0.40	0.38	0.39	0.40	0.47	0.53	0.66	0.73	0.75	0.81	0.82	0.87	0.82	0.85	0.91	0.79	0.84	0.90	0.87	0.84	0.73	0.64
4/3/2016	0.56	0.51	0.47	0.47	0.46	0.48	0.57	0.68	0.83	0.94	0.96	0.95	0.98	0.88	0.77	0.83	0.95	0.97	0.96	1.01	1.10	1.05	0.87	0.70
4/4/2016	0.63	0.60	0.59	0.60	0.61	0.71	0.79	0.81	0.78	0.74	0.80	0.81	0.80	0.77	0.79	0.89	0.87	0.97	1.00	1.03	1.08	1.08	0.89	0.77
4/5/2016	0.68	0.62	0.60	0.60	0.62	0.68	0.81	0.80	0.78	0.75	0.72	0.70	0.70	0.63	0.59	0.65	0.69	0.83	0.86	0.96	0.95	0.97	0.82	0.71
4/6/2016	0.63	0.62	0.64	0.63	0.65	0.75	0.82	0.86	0.77	0.76	0.64	0.65	0.66	0.60	0.59	0.63	0.70	0.87	0.89	0.87	0.97	0.99	0.76	0.63
4/7/2016	0.53	0.53	0.53	0.49	0.50	0.61	0.67	0.69	0.65	0.61	0.58	0.62	0.61	0.68	0.66	0.73	0.75	0.88	0.90	0.91	0.89	0.81	0.69	0.58
4/8/2016	0.50	0.48	0.47	0.47	0.47	0.56	0.67	0.71	0.63	0.60	0.57	0.60	0.56	0.55	0.54	0.61	0.68	0.71	0.80	0.81	0.86	0.81	0.83	0.66
4/9/2016	0.58	0.53	0.53	0.55	0.55	0.57	0.62	0.72	0.86	0.87	0.79	0.89	0.86	0.87	0.87	0.85	0.83	0.95	0.87	0.84	0.86	0.85	0.80	0.71
4/10/2016	0.61	0.55	0.55	0.53	0.54	0.57	0.62	0.79	0.83	0.81	0.90	0.91	0.84	0.83	0.77	0.69	0.69	0.72	0.81	0.87	0.93	0.89	0.77	0.62
4/11/2016	0.52	0.51	0.50	0.49	0.52	0.58	0.67	0.69	0.64	0.71	0.63	0.63	0.60	0.59	0.63	0.64	0.66	0.74	0.85	0.86	0.86	0.83	0.67	0.55
4/12/2016	0.48	0.43	0.41	0.42	0.43	0.50	0.62	0.60	0.58	0.60	0.60	0.64	0.58	0.57	0.63	0.68	0.76	0.79	0.78	0.92	0.89	0.89	0.75	0.62
4/13/2016	0.53	0.51	0.49	0.51	0.54	0.61	0.74	0.80	0.72	0.63	0.62	0.59	0.60	0.54	0.55	0.56	0.66	0.72	0.72	0.83	0.84	0.84	0.65	0.58
4/14/2016	0.50	0.47	0.45	0.46	0.50	0.60	0.72	0.72	0.73	0.67	0.66	0.58	0.59	0.59	0.54	0.52	0.59	0.67	0.68	0.77	0.80	0.77	0.66	0.55
4/15/2016	0.53	0.49	0.50	0.49	0.52	0.59	0.74	0.72	0.70	0.63	0.62	0.64	0.62	0.55	0.58	0.47	0.58	0.64	0.66	0.78	0.84	0.75	0.71	0.58
4/16/2016	0.51	0.50	0.49	0.47	0.52	0.53	0.59	0.69	0.78	0.80	0.77	0.79	0.80	0.77	0.72	0.66	0.68	0.74	0.77	0.81	0.87	0.77	0.70	0.60
4/17/2016	0.53	0.50	0.48	0.49	0.49	0.51	0.59	0.65	0.74	0.73	0.78	0.73	0.68	0.59	0.64	0.67	0.63	0.72	0.74	0.71	0.82	0.76	0.67	0.55
4/18/2016	0.46	0.41	0.40	0.43	0.46	0.50	0.65	0.64	0.61	0.56	0.55	0.59	0.58	0.55	0.50	0.50	0.54	0.64	0.73	0.77	0.78	0.74	0.66	0.53
4/19/2016	0.48	0.41	0.39	0.40	0.40	0.44	0.59	0.61	0.63	0.62	0.62	0.60	0.59	0.59	0.54	0.47	0.52	0.64	0.67	0.72	0.77	0.67	0.62	0.51
4/20/2016	0.46	0.42	0.40	0.39	0.43	0.47	0.58	0.59	0.63	0.64	0.65	0.64	0.59	0.60	0.59	0.56	0.55	0.61	0.65	0.75	0.77	0.84	0.65	0.55
4/21/2016	0.46	0.44	0.40	0.43	0.45	0.49	0.58	0.63	0.64	0.56	0.59	0.62	0.57	0.56	0.52	0.49	0.47	0.57	0.62	0.68	0.70	0.68	0.59	0.48
4/22/2016	0.44	0.42	0.39	0.39	0.37	0.44	0.52	0.53	0.60	0.57	0.55	0.55	0.54	0.57	0.53	0.53	0.57	0.63	0.65	0.74	0.75	0.72	0.69	0.57
4/23/2016	0.47	0.41	0.38	0.38	0.38	0.38	0.42	0.52	0.63	0.66	0.63	0.79	0.75	0.74	0.69	0.63	0.68	0.71	0.64	0.69	0.71	0.72	0.67	0.57
4/24/2016	0.51	0.44	0.42	0.42	0.41	0.44	0.46	0.55	0.67	0.72	0.71	0.70	0.67	0.75	0.73	0.66	0.66	0.69	0.72	0.81	0.81	0.71	0.65	0.59
4/25/2016	0.46	0.43	0.40	0.43	0.46	0.54	0.58	0.60	0.65	0.61	0.65	0.57	0.55	0.60	0.62	0.71	0.66	0.74	0.81	0.82	0.85	0.76	0.63	0.57
4/26/2016	0.49	0.41	0.39	0.40	0.41	0.48	0.61	0.65	0.64	0.66	0.63	0.66	0.69	0.70	0.73	0.73	0.83	0.90	0.94	0.94	0.94	0.87	0.76	0.65
4/27/2016	0.59	0.53	0.54	0.51	0.54	0.62	0.73	0.72	0.68	0.64	0.60	0.56	0.60	0.51	0.48	0.54	0.57	0.68	0.70	0.80	0.94	0.85	0.65	0.56
4/28/2016	0.52	0.46	0.43	0.43	0.45	0.54	0.66	0.62	0.60	0.62	0.60	0.50	0.50	0.49	0.53	0.56	0.62	0.74	0.76	0.80	0.85	0.81	0.69	0.60
4/29/2016	0.53	0.47	0.44	0.46	0.48	0.57	0.63	0.60	0.63	0.57	0.60	0.57	0.56	0.54	0.60	0.56	0.59	0.65	0.70	0.72	0.86	0.80	0.71	0.61
4/30/2016	0.51	0.47	0.46	0.47	0.47	0.50	0.55	0.61	0.71	0.75	0.70	0.66	0.72	0.66	0.67	0.64	0.72	0.72	0.73	0.73	0.74	0.72	0.67	0.60
5/1/2016	0.50	0.47	0.49	0.45	0.48	0.49	0.54	0.65	0.74	0.75	0.78	0.82	0.81	0.86	0.82	0.80	0.87	0.85	0.91	0.93	0.89	0.82	0.73	0.62
5/2/2016	0.51	0.47	0.46	0.46	0.48	0.55	0.66	0.63	0.59	0.59	0.68	0.64	0.68	0.65	0.66	0.62	0.65	0.77	0.75	0.83	0.78	0.76	0.62	0.51
5/3/2016	0.45	0.41	0.40	0.41	0.43	0.50	0.61	0.64	0.64	0.63	0.61	0.58	0.62	0.58	0.58	0.58	0.70	0.78	0.87	0.87	0.91	0.81	0.65	0.53
5/4/2016	0.46	0.44	0.45	0.45	0.46	0.52	0.60	0.61	0.62	0.60	0.61	0.58	0.60	0.54	0.59	0.61	0.72	0.80	0.90	0.91	0.87	0.85	0.73	0.64
5/5/2016	0.52	0.49	0.46	0.47	0.48	0.53	0.65	0.63	0.63	0.63	0.63	0.68	0.65	0.68	0.70	0.69	0.72	0.79	0.93	0.95	0.89	0.88	0.74	0.61
5/6/2016	0.54	0.51	0.51	0.49	0.51	0.59	0.69	0.71	0.69	0.69	0.62	0.61	0.60	0.59	0.59	0.66	0.70	0.78	0.81	0.83	0.84	0.79	0.70	0.59
5/7/2016	0.51	0.49	0.44	0.45	0.44	0.46	0.54	0.66	0.82	0.81	0.88	0.86	0.79	0.73	0.71	0.69	0.75	0.76	0.81	0.78	0.81	0.70	0.65	0.59
5/8/2016	0.50	0.46	0.44	0.42	0.42	0.44	0.49	0.55	0.66	0.75	0.80	0.80	0.84	0.79	0.75	0.74	0.68	0.70	0.75	0.81	0.86	0.80	0.75	0.61
5/9/2016	0.51	0.44	0.42	0.43	0.45	0.52	0.64	0.64	0.64	0.58	0.55	0.55	0.57	0.59	0.55	0.60	0.61	0.70	0.73	0.77	0.89	0.73	0.61	0.54
5/10/2016	0.45	0.41	0.40	0.42	0.44	0.51	0.63	0.61	0.61	0.61	0.57	0.54	0.53	0.49	0.50	0.57	0.61	0.72	0.75	0.73	0.78	0.80	0.65	0.53
5/11/2016	0.44	0.40	0.41	0.42	0.42	0.52	0.59	0.54	0.55	0.54	0.57	0.49	0.54	0.52	0.53	0.49	0.58	0.64	0.68	0.68	0.79	0.78	0.65	0.56
5/12/2016	0.46	0.43	0.38	0.37	0.39	0.46	0.58	0.55	0.56	0.55	0.54	0.57	0.57	0.51	0.51	0.56	0.58	0.68	0.69	0.69	0.81	0.83	0.70	0.59
5/13/2016	0.48	0.41	0.40	0.38	0.40	0.46	0.54	0.55	0.53	0.53	0.56	0.56	0.61	0.60	0.65	0.66	0.63	0.73	0.74	0.81	0.79	0.76	0.67	0.52
5/14/2016	0.50	0.44	0.40	0.41	0.40	0.44	0.45	0.62	0.70	0.73	0.73	0.75	0.71	0.81	0.76	0.73	0.73	0.69	0.75	0.72	0.79	0.75	0.74	0.58
5/15/2016	0.51	0.42	0.42	0.39	0.40	0.44	0.46	0.52	0.68	0.70	0.76	0.79	0.80	0.74	0.71	0.70	0.77	0.83	0.86	0.92	0.96	0.85	0.75	0.59
5/16/2016	0.49	0.46	0.44	0.44	0.46	0.54	0.61	0.62	0.64	0.65	0.66	0.63	0.68	0.63	0.59	0.63	0.76	0.82	0.87	0.83	0.87	0.78	0.65	0.51
5/17/2016	0.48	0.41	0.42	0.42	0.43	0.51	0.64	0.62	0.62	0.58	0.54	0.52	0.56	0.53	0.51	0.56	0.66	0.75	0.73	0.85	0.83	0.73	0.61	0.53
5/18/2016	0.46	0.43	0.38	0.38	0.38	0.45	0.57	0.58	0.65	0.57	0.58	0.58	0.52	0.54	0.53	0.54	0.58	0.67	0.71	0.75	0.77	0.70	0.64	0.55
5/19/2016	0.44	0.43	0.38	0.37	0.37	0.44	0.59	0.64	0.54	0.51	0.59	0.54	0.54	0.54	0.52	0.54	0.56	0.62	0.65	0.76	0.72	0.70	0.66	0.51
5/20/2016	0.46	0.39	0.37	0.39	0.39	0.47	0.59	0.61	0.59	0.53	0.56	0.63	0.57	0.56	0.56	0.55	0.58	0.63	0.66	0.67	0.86	0.76	0.70	0.56
5/21/2016	0.50	0.42	0.41	0.39	0.38	0.41	0.46	0.54	0.65	0.69	0.71	0.67	0.71	0.65	0.67	0.64	0.66	0.68	0.78	0.79	0.79	0.72	0.70	0.63
5/22/2016	0.50	0.45	0.42	0.40	0.39	0.40	0.44	0.56	0.63	0.78	0.74	0.77	0.80	0.83	0.74	0.75	0.72	0.70	0.80	0.86	0.89	0.83	0.73	0.56
5/23/2016	0.46	0.41	0.37	0.38	0.37	0.47	0.59	0.61	0.64	0.56	0.55	0.57	0.58	0.56	0.60	0.67	0.78	0.85	0.85	0.81	0.85	0.82	0.74	0.56
5/24/2016	0.46	0.42	0.40	0.39	0.44	0.47	0.56	0.59	0.55	0.57	0.56	0.55	0.54	0.56	0.58	0.65	0.67	0.73	0.82	0.77	0.78	0.76	0.64	0.50
5/25/2016	0.43	0.40	0.38	0.37	0.40	0.48	0.53	0.55	0.54	0.54	0.57	0.55	0.63	0.61	0.60	0.69	0.76	0.74	0.78	0.84	0.99	0.94	0.80	0.67
5/26/2016	0.54	0.52	0.48	0.45	0.44	0.49	0.56	0.63	0.63	0.65	0.70	0.83	0.86	0.84	0.87	0.87	0.94	1.05	1.09	1.05	1.09	0.97	0.87	0.72
5/27/2016	0.60	0.53	0.50	0.49	0.48	0.55	0.61	0.61	0.68	0.74	0.74	0.73	0.91	0.90	0.88	0.94	0.99	1.02	1.05	1.03	1.03	0.95	0.88	0.71
5/28/2016	0.60	0.52	0.49	0.47	0.45	0.47	0.55	0.63	0.72	0.85	0.97	1.07	1.16	1.24	1.24	1.30	1.26	1.25	1.21	1.15	1.09	1.08	1.01	0.88
5/29/2016	0.73	0.64	0.58	0.56	0.53	0.53	0.58	0.62	0.74	0.93	0.98	1.05	1.11	1.16	1.06	1.13	1.06	1.05	0.99	0.93	1.00	0.96	0.82	0.68
5/30/2016	0.58	0.49	0.46	0.46	0.46	0.48	0.46	0.53	0.61	0.71	0.76	0.77	0.83	0.91	0.91	0.93	0.87	0.86	0.93	0.97	0.99	0.94	0.85	0.68
5/31/2016	0.59	0.52	0.49	0.48	0.48	0.54	0.64	0.68	0.64	0.76	0.81	0.82	0.84	0.89	0.97	1.06	1.14	1.18	1.24	1.21	1.15	1.05	0.95	0.78
6/1/2016	0.65	0.59	0.51	0.52	0.52	0.58	0.63	0.65	0.71	0.66	0.76	0.78	0.81	0.87	0.95	1.06	1.07	1.15	1.10	1.05	1.05	1.02	0.85	0.69
6/2/2016	0.56	0.50	0.47	0.45	0.46	0.52	0.64	0.61	0.61	0.66	0.59	0.62	0.67	0.67	0.73	0.84	0.94	1.00	1.01	1.10	1.03	0.95	0.76	0.65
6/3/2016	0.55	0.48	0.45	0.45	0.46	0.54	0.60	0.62	0.63	0.65	0.75	0.67	0.65	0.67	0.67	0.70	0.76	0.78	0.87	0.91	0.94	0.88	0.78	0.63
6/4/2016	0.55	0.51	0.48	0.46	0.47	0.49	0.52	0.63	0.76	0.86	0.90	1.03	1.14	1.16	1.16	1.20	1.16	1.16	1.12	1.09	1.01	0.93	0.85	0.76
6/5/2016	0.65	0.59	0.53	0.51	0.51	0.52	0.57	0.61	0.72	0.81	0.85	0.98	0.88	0.90	0.88	0.91	1.00	1.02	0.99	1.02	1.00	0.93	0.76	0.65
6/6/2016	0.49	0.47	0.45	0.44	0.46	0.53	0.66	0.67	0.67	0.67	0.75	0.78	0.89	0.95	0.95	1.05	1.08	1.18	1.24	1.19	1.15	1.15	1.00	0.82
6/7/2016	0.64	0.59	0.53	0.52	0.51	0.56	0.65	0.65	0.76	0.76	0.82	0.88	1.00	0.96	0.96	1.12	1.22	1.25	1.32	1.29	1.28	1.11	0.93	0.76
6/8/2016	0.65	0.57	0.52	0.48	0.51	0.55	0.66	0.65	0.69	0.66	0.68	0.76	0.74	0.75	0.82	0.88	0.87	0.91	0.93	0.88	0.97	0.90	0.75	0.62

6/9/2016	0.52	0.47	0.44	0.43	0.44	0.50	0.62	0.62	0.61	0.56	0.60	0.62	0.64	0.57	0.60	0.68	0.77	0.82	0.79	0.84	0.85	0.86	0.74	0.65
6/10/2016	0.51	0.43	0.44	0.41	0.41	0.49	0.57	0.59	0.60	0.66	0.64	0.64	0.68	0.67	0.70	0.66	0.75	0.77	0.87	0.85	0.85	0.86	0.77	0.66
6/11/2016	0.54	0.46	0.43	0.44	0.43	0.44	0.46	0.52	0.65	0.70	0.77	0.77	0.81	0.86	0.80	0.87	0.82	0.84	0.79	0.90	0.92	0.82	0.77	0.70
6/12/2016	0.61	0.52	0.49	0.48	0.47	0.49	0.53	0.61	0.82	0.91	0.90	0.88	0.98	1.02	0.91	0.91	1.00	0.96	0.98	1.01	1.05	0.88	0.85	0.63
6/13/2016	0.52	0.48	0.46	0.44	0.47	0.54	0.63	0.68	0.63	0.60	0.56	0.65	0.65	0.62	0.69	0.75	0.79	0.90	0.89	0.93	0.92	0.90	0.80	0.61
6/14/2016	0.52	0.50	0.49	0.46	0.46	0.53	0.63	0.66	0.67	0.62	0.67	0.65	0.63	0.69	0.81	0.83	0.87	0.94	0.97	0.99	0.98	0.92	0.80	0.64
6/15/2016	0.55	0.49	0.47	0.46	0.46	0.52	0.59	0.66	0.66	0.66	0.67	0.73	0.70	0.82	0.92	0.98	1.08	1.19	1.14	1.12	1.16	1.13	0.93	0.72
6/16/2016	0.62	0.58	0.55	0.53	0.52	0.56	0.66	0.63	0.68	0.65	0.71	0.82	0.87	0.90	0.99	1.07	1.12	1.20	1.29	1.22	1.16	1.18	1.02	0.80
6/17/2016	0.66	0.58	0.54	0.53	0.54	0.60	0.64	0.75	0.75	0.71	0.75	0.80	0.88	0.90	0.94	1.04	1.05	1.12	1.09	1.00	0.93	0.86	0.83	0.74
6/18/2016	0.66	0.56	0.53	0.49	0.50	0.51	0.55	0.66	0.74	0.87	0.96	1.03	1.12	1.15	1.13	1.14	1.18	1.12	1.12	1.09	1.06	1.00	0.90	0.77
6/19/2016	0.68	0.57	0.53	0.52	0.50	0.53	0.54	0.61	0.70	0.79	0.91	0.94	0.98	0.96	1.01	1.03	1.12	1.19	1.04	1.12	1.01	0.94	0.86	0.70
6/20/2016	0.58	0.54	0.51	0.53	0.52	0.53	0.63	0.69	0.66	0.66	0.71	0.76	0.84	1.03	1.01	1.09	1.07	1.11	1.13	1.14	1.16	1.11	1.02	0.83
6/21/2016	0.73	0.61	0.58	0.55	0.56	0.58	0.65	0.73	0.69	0.69	0.69	0.74	0.86	0.94	1.00	1.11	1.23	1.22	1.25	1.25	1.23	1.22	1.07	0.87
6/22/2016	0.70	0.61	0.58	0.55	0.54	0.55	0.61	0.67	0.69	0.71	0.76	0.84	0.88	0.99	1.02	0.99	1.01	1.16	1.19	1.11	1.07	1.09	0.86	0.75
6/23/2016	0.62	0.55	0.53	0.48	0.49	0.52	0.65	0.68	0.63	0.65	0.71	0.81	0.90	0.95	1.00	1.04	1.06	1.11	1.19	1.08	1.11	1.12	1.00	0.80
6/24/2016	0.70	0.62	0.58	0.55	0.54	0.57	0.69	0.69	0.74	0.82	0.82	0.86	0.95	1.00	1.02	1.04	1.14	1.15	1.14	1.08	1.07	0.94	0.83	0.72
6/25/2016	0.61	0.55	0.55	0.54	0.53	0.57	0.56	0.70	0.76	0.86	0.88	0.93	0.99	1.16	1.21	1.16	1.15	1.26	1.17	1.08	1.02	0.97	0.86	0.78
6/26/2016	0.66	0.62	0.59	0.52	0.50	0.52	0.55	0.71	0.78	0.81	0.88	0.90	1.04	1.05	1.14	1.21	1.22	1.31	1.22	1.19	1.19	1.13	0.93	0.77
6/27/2016	0.67	0.62	0.58	0.52	0.53	0.62	0.70	0.74	0.77	0.70	0.81	0.95	1.01	1.04	1.03	1.04	1.06	1.10	1.07	1.05	1.11	1.06	0.92	0.84
6/28/2016	0.72	0.66	0.65	0.61	0.60	0.67	0.75	0.80	0.80	0.81	0.85	0.88	0.88	0.91	0.97	0.98	1.01	1.19	1.21	1.16	1.23	1.19	1.00	0.87
6/29/2016	0.75	0.74	0.67	0.66	0.63	0.64	0.73	0.77	0.80	0.87	0.96	0.98	0.99	1.06	1.10	1.15	1.30	1.37	1.35	1.29	1.35	1.30	1.09	0.89
6/30/2016	0.79	0.76	0.68	0.69	0.64	0.69	0.78	0.79	0.81	0.83	0.96	1.05	1.01	1.06	1.09	1.18	1.25	1.30	1.31	1.30	1.29	1.29	1.15	0.98
7/1/2016	0.81	0.70	0.65	0.64	0.60	0.64	0.70	0.79	0.88	0.90	0.97	1.08	1.12	1.18	1.20	1.22	1.20	1.20	1.28	1.24	1.21	1.12	1.02	0.88
7/2/2016	0.78	0.70	0.65	0.63	0.63	0.64	0.72	0.80	0.90	0.97	1.04	1.09	1.13	1.20	1.15	1.14	1.10	1.15	1.14	1.07	1.10	1.03	0.85	0.77
7/3/2016	0.68	0.62	0.56	0.53	0.51	0.53	0.59	0.70	0.83	0.91	0.92	0.99	1.09	1.09	1.07	1.07	1.17	1.21	1.10	1.01	1.07	0.99	0.90	0.83
7/4/2016	0.72	0.66	0.57	0.57	0.56	0.57	0.61	0.73	0.81	0.92	1.09	1.21	1.24	1.31	1.26	1.25	1.33	1.37	1.24	1.20	1.17	1.11	1.02	0.95
7/5/2016	0.81	0.73	0.67	0.66	0.64	0.67	0.74	0.76	0.84	0.90	0.87	0.95	1.03	1.15	1.16	1.28	1.38	1.45	1.49	1.48	1.57	1.44	1.29	1.09
7/6/2016	0.91	0.85	0.78	0.74	0.74	0.73	0.77	0.86	0.98	1.08	1.21	1.31	1.38	1.43	1.49	1.64	1.72	1.80	1.84	1.75	1.70	1.54	1.44	1.22
7/7/2016	1.06	0.96	0.90	0.85	0.81	0.86	1.01	1.06	1.06	1.20	1.30	1.33	1.40	1.47	1.48	1.51	1.53	1.49	1.61	1.57	1.51	1.61	1.38	1.12
7/8/2016	0.97	0.91	0.85	0.82	0.82	0.82	0.82	0.86	0.86	0.86	0.89	0.98	0.92	0.84	0.86	0.86	0.97	1.06	1.05	1.00	0.93	0.95	0.87	0.78
7/9/2016	0.70	0.62	0.60	0.59	0.55	0.58	0.60	0.64	0.73	0.85	0.89	0.86	0.88	0.98	0.97	0.85	0.84	0.88	0.87	0.85	0.95	0.89	0.80	0.78
7/10/2016	0.66	0.57	0.55	0.54	0.52	0.54	0.55	0.62	0.72	0.81	0.89	0.83	0.94	0.87	0.94	0.96	0.98	0.98	1.01	1.03	1.02	1.01	0.89	0.75
7/11/2016	0.67	0.59	0.55	0.54	0.51	0.59	0.61	0.66	0.68	0.67	0.70	0.80	0.85	0.87	0.91	0.88	0.97	0.98	0.99	1.04	1.09	1.07	0.89	0.76
7/12/2016	0.64	0.60	0.57	0.55	0.55	0.59	0.71	0.71	0.76	0.73	0.75	0.89	1.00	1.02	1.11	1.21	1.16	1.22	1.28	1.23	1.23	1.18	1.02	0.90
7/13/2016	0.74	0.66	0.63	0.63	0.61	0.64	0.68	0.78	0.82	0.88	0.97	1.13	1.22	1.30	1.42	1.45	1.48	1.63	1.54	1.36	1.36	1.29	1.21	1.07
7/14/2016	0.87	0.77	0.70	0.67	0.66	0.68	0.77	0.81	0.93	0.99	1.15	1.14	1.10	1.12	1.06	1.04	1.06	1.22	1.27	1.31	1.35	1.32	1.21	1.01
7/15/2016	0.86	0.79	0.74	0.72	0.71	0.74	0.86	0.91	1.03	1.20	1.40	1.44	1.53	1.64	1.60	1.53	1.53	1.59	1.57	1.63	1.60	1.55	1.40	1.27
7/16/2016	1.04	0.95	0.88	0.82	0.77	0.76	0.83	0.96	1.14	1.29	1.45	1.59	1.72	1.72	1.68	1.75	1.70	1.66	1.56	1.48	1.48	1.43	1.39	1.25
7/17/2016	1.07	0.95	0.86	0.84	0.80	0.81	0.84	0.91	1.06	1.24	1.42	1.62	1.73	1.68	1.77	1.73	1.68	1.66	1.71	1.64	1.60	1.51	1.33	1.21
7/18/2016	1.02	0.90	0.83	0.80	0.77	0.76	0.89	0.92	0.93	1.16	1.30	1.41	1.49	1.62	1.64	1.65	1.59	1.71	1.67	1.72	1.71	1.61	1.44	1.23
7/19/2016	1.03	0.91	0.82	0.78	0.75	0.81	0.87	0.88	0.97	1.06	1.05	1.16	1.18	1.24	1.32	1.32	1.46	1.42	1.46	1.34	1.34	1.29	1.12	0.94
7/20/2016	0.80	0.73	0.66	0.64	0.64	0.64	0.73	0.75	0.75	0.81	0.82	0.85	0.99	1.01	1.06	1.19	1.26	1.32	1.32	1.24	1.22	1.25	1.11	0.93
7/21/2016	0.76	0.69	0.63	0.61	0.60	0.64	0.69	0.73	0.80	0.86	0.96	1.04	1.11	1.16	1.23	1.39	1.49	1.57	1.49	1.45	1.49	1.47	1.28	1.17
7/22/2016	0.97	0.88	0.79	0.73	0.73	0.75	0.83	0.94	1.02	1.12	1.25	1.32	1.45	1.57	1.67	1.74	1.78	1.86	1.78	1.72	1.61	1.59	1.45	1.24
7/23/2016	1.04	0.91	0.87	0.84	0.81	0.81	0.85	0.96	1.13	1.35	1.53	1.70	1.81	1.92	1.99	1.92	1.90	1.87	1.77	1.65	1.63	1.55	1.37	1.21
7/24/2016	1.06	0.92	0.84	0.79	0.75	0.76	0.78	0.86	1.02	1.22	1.29	1.41	1.48	1.60	1.70	1.77	1.73	1.72	1.64	1.58	1.58	1.50	1.26	1.07
7/25/2016	0.96	0.84	0.77	0.74	0.70	0.72	0.79	0.86	0.96	1.11	1.24	1.39	1.50	1.57	1.68	1.66	1.62	1.67	1.63	1.59	1.61	1.52	1.32	1.16
7/26/2016	1.01	0.91	0.81	0.78	0.76	0.77	0.82	0.94	0.98	1.12	1.30	1.35	1.45	1.58	1.58	1.65	1.76	1.87	1.90	1.79	1.77	1.67	1.42	1.24
7/27/2016	1.09	0.96	0.86	0.80	0.74	0.74	0.80	0.90	0.97	1.10	1.26	1.35	1.43	1.48	1.52	1.60	1.70	1.78	1.76	1.66	1.63	1.59	1.40	1.19
7/28/2016	1.04	0.92	0.84	0.77	0.74	0.77	0.84	0.91	1.01	1.17	1.33	1.47	1.48	1.51	1.60	1.66	1.69	1.80	1.79	1.78	1.67	1.60	1.48	1.31
7/29/2016	1.11	1.02	0.98	0.90	0.85	0.86	0.92	0.95	1.04	1.11	1.05	1.00	1.03	1.05	1.15	1.29	1.46	1.44	1.45	1.41	1.45	1.37	1.27	1.10
7/30/2016	0.93	0.86	0.82	0.77	0.75	0.75	0.75	0.86	0.98	1.11	1.25	1.39	1.47	1.45	1.49	1.52	1.53	1.53	1.55	1.58	1.50	1.45	1.33	1.14
7/31/2016	0.99	0.88	0.84	0.83	0.79	0.80	0.80	0.83	0.91	1.09	1.17	1.27	1.44	1.39	1.45	1.45	1.46	1.44	1.42	1.34	1.28	1.31	1.12	0.94
8/1/2016	0.88	0.79	0.74	0.70	0.67	0.69	0.78	0.80	0.91	0.97	1.02	1.09	1.13	1.21	1.19	1.31	1.27	1.37	1.32	1.31	1.28	1.23	1.07	0.94
8/2/2016	0.80	0.73	0.70	0.67	0.64	0.68	0.74	0.78	0.82	0.83	0.83	0.84	0.89	0.86	0.90	0.93	1.00	1.18	1.13	1.08	1.05	1.06	0.98	0.78
8/3/2016	0.64	0.58	0.55	0.54	0.54	0.56	0.62	0.69	0.77	0.81	0.83	0.84	0.97	1.05	1.17	1.17	1.22	1.29	1.27	1.24	1.23	1.18	1.00	0.81
8/4/2016	0.68	0.60	0.57	0.54	0.55	0.58	0.62	0.69	0.79	0.78	0.77	0.89	0.96	1.00	1.04	1.12	1.22	1.30	1.36	1.32	1.26	1.18	1.06	0.84
8/5/2016	0.69	0.63	0.60	0.56	0.58	0.59	0.69	0.73	0.80	0.81	0.94	1.03	1.19	1.19	1.26	1.32	1.38	1.46	1.39	1.26	1.31	1.24	1.13	1.02
8/6/2016	0.83	0.74	0.69	0.65	0.65	0.67	0.71	0.74	0.96	1.16	1.32	1.42	1.63	1.64	1.67	1.71	1.66	1.62	1.50	1.44	1.42	1.34	1.30	1.11
8/7/2016	0.97	0.85	0.80	0.74	0.69	0.72	0.71	0.81	0.98	1.16	1.25	1.34	1.42	1.39	1.49	1.57	1.56	1.65	1.50	1.51	1.45	1.32	1.25	1.05
8/8/2016	0.90	0.82	0.76	0.72	0.66	0.68	0.75	0.81	0.93	1.03	1.15	1.21	1.22	1.33	1.36	1.36	1.41	1.45	1.40	1.39	1.36	1.27	1.13	0.96
8/9/2016	0.82	0.76	0.69	0.66	0.67	0.68	0.73	0.79	0.84	0.91	0.97	1.02	1.14	1.27	1.36	1.45	1.53	1.60	1.59	1.49	1.45	1.40	1.23	1.09
8/10/2016	0.93	0.84	0.77	0.74	0.72	0.75	0.81	0.91	0.92	0.96	0.95	0.93	1.01	0.99	1.03	1.01	1.13	1.27	1.35	1.42	1.44	1.40	1.25	1.13
8/11/2016	1.01	0.92	0.86	0.83	0.81	0.89	0.99	1.07	1.17	1.33	1.44	1.41	1.51	1.61	1.71	1.83	1.85	1.89	1.89	1.93	1.99	1.88	1.65	1.42
8/12/2016	1.20	1.12	1.03	0.98	0.94	1.00	1.01	1.11	1.19	1.35	1.50	1.58	1.74	1.75	1.89	1.98	1.91	1.85	1.75	1.68	1.62	1.54	1.43	1.29
8/13/2016	1.15	1.04	0.96	0.92	0.90	0.92	0.94	1.09	1.31	1.61	1.70	1.79	1.85	1.92	1.98	1.95	1.95	1.96	1.87	1.79	1.73	1.67	1.49	1.28
8/14/2016	1.09	0.96	0.92	0.90	0.85	0.85	0.90	1.01	1.18	1.50	1.79	1.93	1.97	2.14	2.13	2.10	2.17	2.13	2.11	2.11	2.07	1.92	1.69	1.47
8/15/2016	1.35	1.22	1.10	1.04	1.00	0.98	1.03	1.10	1.14	1.31	1.35	1.43	1.54	1.68	1.75	1.72	1.69	1.76	1.87	1.78	1.77	1.70	1.44	1.26
8/16/2016	1.07	0.97	0.88	0.83	0.79	0.80	0.85	0.90	1.00	1.04	1.10	1.22	1.36	1.29	1.31	1.48	1.52	1.60	1.61	1.64	1.68	1.58	1.43	1.28
8/17/2016	1.08	1.03	0.96	0.97	0.94	0.99	1.06	1.09	1.09	1.15	1.17	1.28	1.34	1.34	1.41	1.52	1.57	1.59	1.65	1.54	1.51	1.38	1.22	1.02
8/18/2016	0.80	0.73	0.68	0.64	0.64	0.66	0.75	0.76	0.78	0.87	0.99	1.11	1.23	1.33	1.44	1.49	1.58	1.69	1.62	1.54	1.52	1.48	1.32	1.13
8/19/2016	0.99	0.87	0.80	0.75	0.72	0.75	0.81	0.92	0.94	1.01	1.16	1.26	1.39	1.42	1.46	1.47	1.55	1.58	1.55	1.52	1.57	1.42	1.31	1.13
8/20/2016	0.98	0.90	0.80	0.77	0.75	0.74	0.75	0.78	1.02	1.19	1.34	1.47	1.48	1.53	1.55	1.62	1.56	1.60	1.43	1.43	1.43	1.37	1.19	1.04
8/21/2016	0.96	0.86	0.79	0.73	0.70	0.73	0.76	0.91	1.04	1.09	1.19	1.31	1.37	1.50	1.52	1.55	1.46	1.50	1.48	1.56	1.52	1.44	1.27	1.13

8/22/2016	0.96	0.92	0.88	0.87	0.80	0.82	0.87	0.92	0.87	0.98	1.03	1.09	1.20	1.25	1.26	1.26	1.32	1.35	1.31	1.20	1.22	1.06	0.94	0.78
8/23/2016	0.66	0.61	0.59	0.57	0.55	0.59	0.68	0.70	0.73	0.80	0.82	0.81	0.84	0.97	1.04	1.05	1.09	1.21	1.19	1.21	1.21	1.09	1.01	0.85
8/24/2016	0.71	0.63	0.61	0.59	0.60	0.60	0.68	0.72	0.82	0.84	0.96	0.97	1.08	1.16	1.20	1.24	1.33	1.46	1.51	1.42	1.39	1.37	1.14	0.99
8/25/2016	0.85	0.77	0.72	0.68	0.66	0.71	0.81	0.78	0.84	0.94	0.95	1.10	1.12	1.19	1.21	1.26	1.37	1.43	1.40	1.35	1.36	1.33	1.24	1.08
8/26/2016	0.97	0.92	0.83	0.81	0.79	0.80	0.87	0.91	0.96	0.99	1.10	1.26	1.40	1.52	1.57	1.70	1.77	1.79	1.76	1.68	1.61	1.55	1.42	1.28
8/27/2016	1.07	0.98	0.89	0.81	0.79	0.81	0.84	0.86	1.05	1.24	1.26	1.40	1.46	1.69	1.68	1.74	1.64	1.60	1.62	1.49	1.45	1.32	1.17	1.04
8/28/2016	0.90	0.84	0.77	0.73	0.70	0.70	0.70	0.80	0.95	1.06	1.16	1.27	1.31	1.49	1.46	1.56	1.58	1.51	1.46	1.44	1.37	1.26	1.13	0.99
8/29/2016	0.83	0.76	0.73	0.70	0.70	0.75	0.81	0.93	0.90	0.97	1.02	1.16	1.26	1.41	1.51	1.53	1.63	1.67	1.64	1.62	1.61	1.37	1.15	0.99
8/30/2016	0.85	0.75	0.67	0.63	0.61	0.64	0.71	0.73	0.74	0.80	0.88	0.92	0.99	1.03	1.10	1.20	1.36	1.43	1.37	1.34	1.33	1.24	1.09	0.95
8/31/2016	0.81	0.74	0.71	0.68	0.69	0.71	0.80	0.78	0.81	0.88	0.82	0.90	0.99	1.01	1.09	1.14	1.17	1.33	1.40	1.43	1.41	1.32	1.15	1.04
9/1/2016	0.87	0.83	0.79	0.75	0.71	0.76	0.84	0.86	0.83	0.87	0.88	0.86	0.86	0.87	0.89	0.94	0.99	1.14	1.20	1.30	1.25	1.12	1.06	0.91
9/2/2016	0.72	0.62	0.59	0.59	0.58	0.59	0.69	0.71	0.74	0.74	0.80	0.84	0.95	0.93	0.98	1.02	1.02	1.11	1.12	1.12	1.12	1.05	0.89	0.79
9/3/2016	0.69	0.63	0.60	0.58	0.57	0.61	0.60	0.65	0.75	0.84	0.91	0.93	0.91	0.98	0.99	0.97	1.05	1.02	1.00	1.00	0.93	0.89	0.89	0.75
9/4/2016	0.64	0.58	0.55	0.56	0.53	0.57	0.56	0.62	0.79	0.87	0.95	0.94	0.91	0.93	0.87	0.95	0.95	0.95	1.01	1.02	1.01	0.94	0.87	0.75
9/5/2016	0.64	0.58	0.55	0.53	0.52	0.53	0.54	0.59	0.74	0.84	0.88	0.90	0.96	0.90	0.98	0.96	0.90	0.94	1.01	1.01	0.95	0.89	0.80	0.68
9/6/2016	0.58	0.53	0.52	0.51	0.50	0.57	0.69	0.78	0.71	0.71	0.70	0.70	0.77	0.76	0.79	0.84	0.95	1.10	1.11	1.12	1.05	0.90	0.89	0.82
9/7/2016	0.70	0.61	0.60	0.59	0.57	0.60	0.69	0.78	0.75	0.78	0.72	0.80	0.89	0.97	0.91	1.03	1.12	1.27	1.26	1.23	1.24	1.20	1.00	0.88
9/8/2016	0.79	0.69	0.66	0.63	0.62	0.66	0.75	0.80	0.80	0.80	0.86	0.87	1.01	0.99	1.07	1.19	1.28	1.42	1.39	1.45	1.40	1.27	1.15	0.91
9/9/2016	0.82	0.74	0.72	0.69	0.66	0.73	0.82	0.80	0.82	0.87	0.99	1.11	1.25	1.34	1.45	1.58	1.61	1.65	1.65	1.63	1.60	1.44	1.29	1.11
9/10/2016	0.98	0.90	0.83	0.79	0.78	0.78	0.76	0.89	1.00	1.11	1.22	1.32	1.38	1.46	1.66	1.54	1.54	1.52	1.43	1.38	1.42	1.26	1.13	1.10
9/11/2016	0.98	0.89	0.80	0.78	0.76	0.78	0.81	0.89	0.97	1.02	1.04	1.12	1.22	1.26	1.27	1.38	1.31	1.28	1.30	1.28	1.22	1.07	0.95	0.79
9/12/2016	0.70	0.63	0.60	0.56	0.54	0.58	0.64	0.64	0.62	0.66	0.64	0.67	0.76	0.74	0.81	0.85	0.94	1.02	0.98	1.07	1.07	1.04	0.84	0.72
9/13/2016	0.61	0.56	0.53	0.50	0.50	0.55	0.65	0.66	0.68	0.71	0.74	0.71	0.79	0.80	0.89	0.88	0.93	1.06	1.04	1.14	1.06	1.03	0.93	0.71
9/14/2016	0.59	0.57	0.54	0.52	0.54	0.60	0.68	0.73	0.73	0.79	0.78	0.82	0.91	1.05	1.14	1.23	1.34	1.38	1.33	1.38	1.35	1.25	1.06	0.89
9/15/2016	0.72	0.65	0.58	0.55	0.57	0.59	0.67	0.64	0.65	0.67	0.67	0.65	0.69	0.73	0.73	0.76	0.94	0.91	0.93	0.96	0.96	0.88	0.74	0.61
9/16/2016	0.54	0.48	0.44	0.46	0.46	0.52	0.61	0.59	0.58	0.58	0.61	0.61	0.62	0.63	0.67	0.68	0.79	0.81	0.75	0.92	0.91	0.83	0.68	0.59
9/17/2016	0.47	0.45	0.44	0.44	0.45	0.49	0.52	0.59	0.67	0.71	0.74	0.82	0.83	0.81	0.78	0.88	0.85	0.91	0.91	0.93	0.90	0.83	0.74	0.68
9/18/2016	0.60	0.53	0.51	0.53	0.51	0.55	0.59	0.65	0.73	0.79	0.92	0.98	1.14	1.28	1.14	1.18	1.21	1.28	1.13	1.22	1.22	1.15	1.02	0.88
9/19/2016	0.76	0.69	0.66	0.62	0.61	0.71	0.77	0.72	0.75	0.81	0.78	0.81	0.85	0.80	0.76	0.80	1.01	1.03	1.10	1.19	1.17	1.01	0.90	0.78
9/20/2016	0.64	0.59	0.56	0.54	0.55	0.60	0.73	0.75	0.73	0.76	0.74	0.78	0.88	0.91	0.95	1.06	1.09	1.20	1.26	1.27	1.21	1.12	0.98	0.87
9/21/2016	0.73	0.67	0.59	0.57	0.58	0.62	0.71	0.68	0.72	0.71	0.76	0.80	0.89	0.94	0.97	1.03	1.05	1.16	1.16	1.15	1.14	1.00	0.90	0.79
9/22/2016	0.66	0.60	0.56	0.54	0.56	0.58	0.68	0.64	0.68	0.70	0.71	0.72	0.85	0.85	0.97	0.96	1.09	1.17	1.21	1.15	1.16	1.04	0.85	0.72
9/23/2016	0.61	0.56	0.53	0.51	0.52	0.58	0.64	0.66	0.71	0.66	0.71	0.69	0.76	0.82	0.87	0.92	1.01	1.10	1.09	1.09	1.10	0.96	0.83	0.74
9/24/2016	0.66	0.55	0.51	0.50	0.48	0.50	0.55	0.63	0.75	0.84	0.78	0.79	0.82	0.83	0.80	0.85	0.85	0.83	0.82	0.88	0.87	0.77	0.74	0.64
9/25/2016	0.52	0.46	0.45	0.45	0.43	0.46	0.49	0.57	0.69	0.75	0.74	0.72	0.77	0.74	0.80	0.88	0.78	0.82	0.82	0.91	0.97	0.87	0.69	0.59
9/26/2016	0.53	0.46	0.46	0.46	0.45	0.49	0.65	0.66	0.67	0.63	0.58	0.57	0.65	0.57	0.59	0.63	0.69	0.78	0.88	0.93	0.88	0.81	0.72	0.61
9/27/2016	0.50	0.44	0.45	0.43	0.44	0.51	0.59	0.60	0.62	0.69	0.67	0.69	0.69	0.60	0.65	0.70	0.77	0.87	0.92	1.02	0.98	0.83	0.74	0.60
9/28/2016	0.51	0.47	0.44	0.44	0.46	0.52	0.60	0.67	0.63	0.67	0.60	0.60	0.63	0.63	0.60	0.72	0.76	0.83	0.89	0.87	0.85	0.82	0.74	0.60
9/29/2016	0.49	0.47	0.45	0.44	0.44	0.50	0.60	0.66	0.61	0.59	0.57	0.60	0.58	0.59	0.58	0.67	0.72	0.81	0.93	0.98	0.95	0.82	0.67	0.59
9/30/2016	0.51	0.45	0.42	0.44	0.45	0.50	0.63	0.59	0.64	0.65	0.59	0.62	0.67	0.64	0.70	0.69	0.73	0.79	0.91	0.85	0.84	0.76	0.72	0.59
10/1/2016	0.49	0.45	0.41	0.40	0.40	0.41	0.47	0.56	0.66	0.73	0.78	0.78	0.79	0.84	0.87	0.85	0.81	0.84	0.87	0.93	0.84	0.78	0.65	0.59
10/2/2016	0.51	0.45	0.44	0.43	0.42	0.43	0.47	0.54	0.67	0.78	0.80	0.80	0.79	0.83	0.83	0.79	0.80	0.94	0.97	0.98	0.90	0.79	0.62	0.52
10/3/2016	0.44	0.42	0.41	0.41	0.41	0.49	0.60	0.58	0.56	0.58	0.60	0.60	0.66	0.64	0.65	0.67	0.72	0.78	0.95	1.04	0.92	0.83	0.71	0.60
10/4/2016	0.50	0.44	0.41	0.41	0.42	0.48	0.59	0.58	0.62	0.62	0.59	0.55	0.61	0.62	0.59	0.66	0.73	0.79	0.90	0.88	0.86	0.79	0.68	0.55
10/5/2016	0.47	0.43	0.43	0.41	0.43	0.48	0.61	0.58	0.59	0.55	0.59	0.57	0.55	0.52	0.59	0.62	0.67	0.77	0.92	0.91	0.86	0.74	0.64	0.53
10/6/2016	0.44	0.42	0.40	0.40	0.42	0.48	0.63	0.65	0.66	0.64	0.55	0.52	0.53	0.57	0.57	0.56	0.67	0.77	0.85	0.92	0.84	0.75	0.67	0.55
10/7/2016	0.47	0.41	0.41	0.41	0.41	0.49	0.60	0.59	0.63	0.58	0.62	0.60	0.58	0.53	0.59	0.62	0.72	0.78	0.80	0.81	0.80	0.76	0.69	0.60
10/8/2016	0.49	0.42	0.41	0.41	0.41	0.42	0.49	0.57	0.61	0.68	0.75	0.75	0.76	0.74	0.72	0.76	0.75	0.83	0.84	0.83	0.78	0.73	0.67	0.57
10/9/2016	0.50	0.44	0.43	0.42	0.43	0.42	0.46	0.52	0.64	0.71	0.87	0.86	0.86	0.87	0.84	0.83	0.91	0.94	0.93	0.96	0.84	0.80	0.67	0.59
10/10/2016	0.53	0.47	0.44	0.44	0.44	0.45	0.57	0.65	0.71	0.72	0.79	0.82	0.75	0.78	0.74	0.65	0.71	0.77	0.87	0.89	0.82	0.76	0.68	0.54
10/11/2016	0.47	0.43	0.43	0.44	0.47	0.53	0.69	0.62	0.67	0.61	0.56	0.60	0.60	0.62	0.58	0.64	0.71	0.83	0.90	0.94	0.91	0.86	0.72	0.63
10/12/2016	0.49	0.44	0.43	0.43	0.46	0.53	0.63	0.65	0.65	0.61	0.56	0.56	0.64	0.61	0.57	0.59	0.79	0.88	0.95	0.97	0.85	0.78	0.71	0.57
10/13/2016	0.49	0.43	0.41	0.40	0.42	0.50	0.62	0.63	0.60	0.55	0.57	0.55	0.56	0.56	0.58	0.60	0.61	0.76	0.88	0.96	0.87	0.72	0.67	0.53
10/14/2016	0.45	0.40	0.40	0.39	0.40	0.44	0.59	0.62	0.66	0.58	0.57	0.58	0.60	0.53	0.60	0.61	0.66	0.71	0.82	0.83	0.80	0.80	0.76	0.59
10/15/2016	0.50	0.46	0.46	0.42	0.44	0.46	0.50	0.66	0.79	0.81	0.72	0.72	0.73	0.69	0.63	0.67	0.69	0.73	0.86	0.92	0.82	0.81	0.69	0.63
10/16/2016	0.52	0.49	0.44	0.45	0.45	0.48	0.50	0.60	0.80	0.77	0.75	0.79	0.72	0.73	0.70	0.69	0.70	0.79	0.89	0.94	0.88	0.75	0.63	0.55
10/17/2016	0.46	0.45	0.42	0.40	0.41	0.46	0.60	0.60	0.55	0.56	0.54	0.62	0.63	0.59	0.66	0.69	0.75	0.82	0.91	0.98	0.85	0.81	0.69	0.56
10/18/2016	0.47	0.42	0.40	0.39	0.41	0.47	0.59	0.59	0.61	0.59	0.55	0.63	0.61	0.63	0.61	0.63	0.72	0.81	0.88	0.91	0.90	0.81	0.70	0.60
10/19/2016	0.50	0.44	0.45	0.42	0.47	0.52	0.61	0.55	0.58	0.59	0.57	0.56	0.60	0.59	0.62	0.66	0.74	0.81	0.95	0.92	0.81	0.78	0.71	0.60
10/20/2016	0.47	0.45	0.42	0.43	0.45	0.51	0.61	0.60	0.62	0.62	0.56	0.58	0.56	0.62	0.62	0.63	0.68	0.81	0.96	0.93	0.84	0.76	0.69	0.59
10/21/2016	0.45	0.43	0.40	0.41	0.42	0.46	0.57	0.57	0.61	0.58	0.54	0.56	0.56	0.67	0.60	0.67	0.77	0.78	0.88	0.88	0.80	0.80	0.71	0.61
10/22/2016	0.53	0.47	0.44	0.45	0.44	0.46	0.49	0.57	0.68	0.79	0.79	0.78	0.83	0.76	0.79	0.82	0.75	0.81	0.91	0.91	0.86	0.79	0.70	0.62
10/23/2016	0.53	0.52	0.47	0.44	0.44	0.45	0.51	0.63	0.73	0.72	0.77	0.79	0.79	0.85	0.75	0.76	0.80	0.82	0.90	0.84	0.87	0.78	0.64	0.54
10/24/2016	0.45	0.44	0.41	0.41	0.42	0.50	0.66	0.66	0.66	0.60	0.58	0.62	0.61	0.60	0.63	0.65	0.68	0.82	0.89	1.01	0.88	0.81	0.72	0.63
10/25/2016	0.51	0.47	0.46	0.45	0.48	0.53	0.69	0.69	0.65	0.66	0.63	0.63	0.63	0.64	0.62	0.69	0.73	0.89	0.96	1.00	0.91	0.88	0.72	0.65
10/26/2016	0.57	0.52	0.49	0.50	0.53	0.60	0.73	0.71	0.74	0.68	0.71	0.68	0.67	0.60	0.63	0.69	0.77	0.84	0.95	1.03	0.90	0.84	0.73	0.70
10/27/2016	0.57	0.53	0.53	0.53	0.55	0.62	0.75	0.78	0.77	0.71	0.68	0.65	0.72	0.73	0.68	0.74	0.82	0.98	0.97	1.01	0.95	0.91	0.74	0.63
10/28/2016	0.54	0.50	0.48	0.48	0.51	0.54	0.67	0.70	0.68	0.62	0.63	0.63	0.64	0.66	0.66	0.70	0.85	0.90	0.88	0.92	0.92	0.82	0.75	0.60
10/29/2016	0.53	0.50	0.48	0.48	0.49	0.50	0.57	0.64	0.76	0.77	0.83	0.79	0.80	0.82	0.74	0.73	0.87	0.85	0.91	0.89	0.77	0.76	0.69	0.60
10/30/2016	0.50	0.44	0.44	0.41	0.44	0.45	0.50	0.55	0.72	0.74	0.74	0.69	0.74	0.66	0.71	0.71	0.73	0.88	0.87	0.92	0.88	0.79	0.65	0.54
10/31/2016	0.47	0.42	0.40	0.41	0.42	0.48	0.59	0.58	0.65	0.60	0.59	0.56	0.58	0.65	0.64	0.66	0.67	0.79	0.84	0.88	0.87	0.83	0.78	0.64
11/1/2016	0.53	0.50	0.47	0.52	0.55	0.62	0.76	0.69	0.71	0.69	0.59	0.56	0.60	0.60	0.54	0.58	0.73	0.87	1.01	0.97	0.85	0.83	0.69	0.56
11/2/2016	0.47	0.44	0.45	0.43	0.46	0.52	0.63	0.66	0.68	0.59	0.60	0.60	0.57	0.48	0.49	0.61	0.64	0.72	0.88	0.94	0.81	0.76	0.68	0.54
11/3/2016	0.46	0.41	0.38	0.38	0.40	0.49	0.57	0.58	0.60	0.55	0.52	0.58	0.54	0.54	0.59	0.55	0.62	0.77	0.89	0.87	0.89	0.77	0.63	0.55

11/4/2016	0.43	0.38	0.37	0.39	0.40	0.45	0.58	0.62	0.64	0.56	0.55	0.54	0.55	0.52	0.49	0.57	0.61	0.68	0.77	0.73	0.75	0.81	0.74	0.59
11/5/2016	0.50	0.48	0.46	0.46	0.46	0.49	0.55	0.66	0.76	0.77	0.76	0.73	0.76	0.72	0.69	0.76	0.71	0.80	0.91	0.90	0.75	0.79	0.74	0.63
11/6/2016	0.55	0.45	0.43	0.43	0.43	0.48	0.53	0.66	0.81	0.81	0.83	0.81	0.84	0.84	0.79	0.81	0.93	1.05	1.06	1.05	0.94	0.82	0.75	0.64
11/7/2016	0.53	0.49	0.49	0.51	0.54	0.60	0.79	0.70	0.65	0.67	0.61	0.65	0.70	0.64	0.61	0.59	0.79	0.98	1.04	0.96	0.96	0.88	0.80	0.65
11/8/2016	0.59	0.52	0.53	0.52	0.54	0.63	0.78	0.75	0.71	0.70	0.62	0.61	0.63	0.59	0.57	0.58	0.76	0.87	0.92	0.94	0.86	0.87	0.73	0.63
11/9/2016	0.57	0.50	0.51	0.49	0.51	0.58	0.72	0.71	0.71	0.61	0.61	0.61	0.62	0.60	0.66	0.65	0.75	0.90	0.93	0.91	0.84	0.76	0.64	0.51
11/10/2016	0.47	0.47	0.46	0.44	0.49	0.54	0.71	0.70	0.70	0.65	0.61	0.56	0.57	0.55	0.62	0.63	0.76	0.87	0.94	0.98	0.93	0.81	0.64	0.57
11/11/2016	0.53	0.52	0.49	0.46	0.50	0.55	0.62	0.66	0.83	0.79	0.72	0.66	0.70	0.61	0.68	0.65	0.74	0.86	0.89	0.88	0.89	0.82	0.71	0.63
11/12/2016	0.56	0.54	0.52	0.50	0.54	0.56	0.61	0.74	0.81	0.75	0.80	0.80	0.80	0.74	0.71	0.71	0.80	0.94	0.94	0.92	0.91	0.79	0.71	0.64
11/13/2016	0.60	0.56	0.52	0.52	0.51	0.54	0.63	0.72	0.85	0.88	0.77	0.83	0.79	0.74	0.73	0.69	0.84	1.03	1.00	1.05	0.95	0.85	0.75	0.61
11/14/2016	0.52	0.49	0.49	0.51	0.52	0.59	0.73	0.68	0.67	0.65	0.64	0.61	0.55	0.54	0.57	0.56	0.76	0.93	1.01	0.95	0.90	0.78	0.71	0.61
11/15/2016	0.50	0.47	0.46	0.46	0.47	0.52	0.64	0.62	0.62	0.64	0.65	0.62	0.63	0.60	0.66	0.70	0.84	0.90	0.98	0.95	0.91	0.75	0.63	0.55
11/16/2016	0.46	0.43	0.41	0.41	0.47	0.50	0.63	0.64	0.61	0.55	0.55	0.54	0.53	0.52	0.54	0.54	0.68	0.86	0.94	0.91	0.85	0.76	0.64	0.54
11/17/2016	0.45	0.44	0.44	0.46	0.49	0.53	0.69	0.65	0.66	0.61	0.64	0.66	0.66	0.65	0.62	0.58	0.70	0.87	0.91	0.92	0.89	0.76	0.69	0.55
11/18/2016	0.51	0.49	0.48	0.49	0.52	0.62	0.74	0.69	0.68	0.63	0.53	0.55	0.59	0.52	0.51	0.57	0.70	0.84	0.80	0.84	0.82	0.76	0.67	0.58
11/19/2016	0.55	0.46	0.46	0.45	0.47	0.51	0.52	0.68	0.77	0.73	0.72	0.77	0.78	0.80	0.67	0.68	0.83	0.92	0.92	0.86	0.92	0.78	0.69	0.59
11/20/2016	0.51	0.47	0.42	0.41	0.42	0.45	0.51	0.62	0.78	0.78	0.80	0.88	0.88	0.89	0.85	0.91	0.90	0.99	1.10	1.02	0.99	0.88	0.76	0.67
11/21/2016	0.62	0.56	0.57	0.60	0.60	0.67	0.83	0.78	0.80	0.85	0.74	0.77	0.75	0.74	0.72	0.81	0.97	1.04	1.10	1.04	1.00	0.98	0.89	0.72
11/22/2016	0.63	0.60	0.62	0.63	0.65	0.68	0.86	0.84	0.80	0.75	0.74	0.73	0.72	0.70	0.72	0.77	0.86	1.06	1.13	1.12	1.10	1.02	0.82	0.67
11/23/2016	0.61	0.61	0.60	0.64	0.67	0.74	0.91	0.89	0.88	0.83	0.78	0.75	0.70	0.72	0.74	0.75	0.95	1.05	1.14	1.08	1.08	0.93	0.83	0.71
11/24/2016	0.68	0.60	0.58	0.58	0.61	0.63	0.68	0.88	1.05	1.14	1.18	1.24	1.08	0.96	0.83	0.85	0.82	0.86	0.83	0.84	0.88	0.80	0.74	0.59
11/25/2016	0.54	0.54	0.50	0.49	0.50	0.52	0.58	0.65	0.75	0.79	0.85	0.87	0.86	0.92	0.81	0.81	0.86	0.92	0.98	0.92	0.85	0.82	0.72	0.59
11/26/2016	0.52	0.48	0.50	0.46	0.47	0.50	0.55	0.63	0.72	0.74	0.81	0.78	0.78	0.75	0.78	0.73	0.86	0.94	0.91	0.89	0.90	0.86	0.82	0.79
11/27/2016	0.63	0.55	0.55	0.56	0.55	0.58	0.62	0.75	0.81	0.87	0.79	0.76	0.82	0.88	0.86	0.93	1.02	1.16	1.10	1.13	1.06	0.99	0.78	0.68
11/28/2016	0.63	0.58	0.59	0.61	0.63	0.68	0.83	0.79	0.77	0.70	0.71	0.68	0.67	0.62	0.65	0.68	0.84	1.05	1.05	1.07	1.02	0.92	0.84	0.72
11/29/2016	0.62	0.59	0.57	0.58	0.58	0.66	0.83	0.81	0.75	0.75	0.73	0.70	0.73	0.77	0.71	0.77	0.95	1.00	1.06	1.00	1.03	0.87	0.71	0.58
11/30/2016	0.50	0.44	0.42	0.43	0.45	0.53	0.68	0.64	0.66	0.58	0.60	0.57	0.61	0.63	0.71	0.73	0.84	1.00	1.05	1.04	0.98	0.93	0.75	0.58
12/1/2016	0.51	0.50	0.49	0.46	0.47	0.53	0.74	0.67	0.58	0.57	0.58	0.52	0.57	0.53	0.53	0.65	0.71	0.93	0.98	1.04	0.92	0.80	0.70	0.59
12/2/2016	0.51	0.44	0.47	0.47	0.51	0.62	0.83	0.79	0.67	0.65	0.69	0.63	0.62	0.60	0.59	0.70	0.79	0.90	0.92	0.96	0.91	0.91	0.77	0.65
12/3/2016	0.60	0.53	0.53	0.52	0.54	0.57	0.63	0.73	0.80	0.89	0.81	0.90	0.80	0.75	0.76	0.81	0.90	1.06	1.11	1.07	0.96	0.92	0.87	0.72
12/4/2016	0.65	0.62	0.59	0.57	0.61	0.63	0.69	0.83	0.83	0.90	0.92	0.91	0.90	0.84	0.84	0.82	1.00	1.17	1.28	1.20	1.10	1.03	0.82	0.71
12/5/2016	0.61	0.55	0.58	0.57	0.59	0.65	0.81	0.78	0.77	0.77	0.79	0.73	0.74	0.73	0.75	0.76	0.99	1.13	1.18	1.15	1.07	0.97	0.86	0.71
12/6/2016	0.59	0.57	0.56	0.58	0.56	0.64	0.84	0.78	0.72	0.67	0.65	0.62	0.61	0.60	0.70	0.70	0.86	1.09	1.06	1.09	1.03	0.88	0.77	0.64
12/7/2016	0.55	0.52	0.52	0.53	0.55	0.64	0.78	0.73	0.72	0.75	0.78	0.67	0.71	0.64	0.64	0.74	0.88	1.05	1.12	1.10	1.04	0.93	0.77	0.69
12/8/2016	0.58	0.51	0.52	0.53	0.54	0.62	0.79	0.79	0.74	0.72	0.70	0.69	0.71	0.67	0.67	0.74	0.84	1.09	1.14	1.10	1.15	1.02	0.85	0.72
12/9/2016	0.63	0.61	0.61	0.60	0.60	0.70	0.86	0.84	0.80	0.78	0.74	0.72	0.68	0.69	0.71	0.72	0.89	1.07	1.13	1.18	1.14	1.00	0.92	0.83
12/10/2016	0.70	0.66	0.67	0.66	0.66	0.70	0.77	0.86	0.99	1.01	1.04	1.00	1.01	1.03	0.94	0.96	1.06	1.10	1.19	1.17	1.17	1.10	1.03	0.88
12/11/2016	0.78	0.71	0.67	0.71	0.72	0.76	0.80	0.92	1.05	1.05	1.09	0.95	0.93	0.95	0.97	1.05	1.15	1.33	1.25	1.24	1.16	1.06	0.90	0.77
12/12/2016	0.65	0.62	0.64	0.61	0.63	0.68	0.81	0.79	0.80	0.77	0.80	0.83	0.83	0.80	0.82	0.82	0.93	1.15	1.21	1.20	1.15	0.97	0.85	0.76
12/13/2016	0.63	0.59	0.57	0.57	0.60	0.67	0.79	0.81	0.80	0.77	0.67	0.66	0.63	0.65	0.64	0.80	0.95	1.05	1.08	1.12	1.01	0.90	0.81	0.70
12/14/2016	0.62	0.56	0.54	0.55	0.56	0.66	0.77	0.77	0.72	0.75	0.66	0.63	0.65	0.60	0.62	0.68	0.91	1.06	1.06	1.20	1.12	1.10	0.95	0.75
12/15/2016	0.64	0.64	0.62	0.65	0.66	0.72	0.89	0.87	0.79	0.77	0.81	0.84	0.80	0.78	0.87	0.87	1.11	1.26	1.30	1.40	1.29	1.20	1.11	0.95
12/16/2016	0.88	0.86	0.86	0.84	0.86	0.94	1.05	1.07	1.08	1.03	0.98	0.96	0.95	0.84	0.91	0.94	1.10	1.26	1.37	1.40	1.30	1.20	1.09	0.92
12/17/2016	0.80	0.77	0.77	0.75	0.75	0.79	0.79	0.90	1.05	1.13	1.16	1.15	1.10	1.12	1.03	1.06	1.06	1.11	1.16	1.10	1.07	1.00	0.92	0.80
12/18/2016	0.65	0.62	0.59	0.57	0.57	0.59	0.66	0.69	0.84	0.85	0.90	0.90	0.94	0.85	0.90	0.99	1.13	1.12	1.14	1.20	1.13	1.01	0.83	0.70
12/19/2016	0.64	0.58	0.60	0.60	0.62	0.73	0.88	0.89	0.85	0.84	0.81	0.87	0.79	0.73	0.78	0.85	1.08	1.24	1.28	1.30	1.24	1.16	1.02	0.83
12/20/2016	0.75	0.67	0.69	0.72	0.73	0.82	0.97	0.96	0.90	0.90	0.84	0.85	0.74	0.76	0.74	0.78	0.97	1.15	1.21	1.24	1.23	1.18	0.97	0.79
12/21/2016	0.72	0.64	0.63	0.63	0.66	0.73	0.88	0.89	0.84	0.87	0.85	0.77	0.75	0.74	0.76	0.83	1.03	1.22	1.18	1.29	1.23	1.11	0.98	0.78
12/22/2016	0.69	0.64	0.65	0.63	0.63	0.70	0.85	0.89	0.87	0.86	0.86	0.86	0.80	0.80	0.75	0.79	0.90	1.12	1.13	1.22	1.16	1.06	0.97	0.83
12/23/2016	0.72	0.65	0.61	0.61	0.64	0.70	0.81	0.85	0.89	0.91	0.86	0.84	0.86	0.81	0.81	0.88	1.07	1.17	1.20	1.25	1.20	1.10	0.99	0.84
12/24/2016	0.71	0.67	0.63	0.62	0.61	0.63	0.67	0.79	0.82	1.03	1.15	1.16	1.25	1.26	1.23	1.22	1.21	1.19	1.16	1.11	1.13	1.04	0.98	0.91
12/25/2016	0.76	0.70	0.65	0.63	0.61	0.66	0.75	0.91	0.99	1.01	1.02	1.01	1.05	0.96	0.93	0.91	0.94	1.02	1.01	1.02	1.07	1.05	0.92	0.83
12/26/2016	0.74	0.68	0.69	0.68	0.67	0.72	0.75	0.84	0.94	0.96	0.97	0.91	0.96	0.91	0.87	1.00	1.09	1.25	1.19	1.16	1.07	0.98	0.85	0.75
12/27/2016	0.63	0.54	0.53	0.50	0.50	0.55	0.67	0.70	0.70	0.76	0.81	0.80	0.88	0.80	0.76	0.82	0.96	1.07	1.13	1.11	1.03	1.02	0.87	0.82
12/28/2016	0.63	0.60	0.59	0.59	0.61	0.65	0.73	0.84	0.80	0.80	0.93	0.83	0.85	0.86	0.87	0.88	1.02	1.15	1.18	1.15	1.18	1.07	0.98	0.86
12/29/2016	0.74	0.69	0.67	0.65	0.66	0.71	0.81	0.88	0.97	0.93	0.99	0.89	0.88	0.92	0.91	1.03	1.06	1.18	1.27	1.17	1.19	1.07	0.90	0.76
12/30/2016	0.66	0.62	0.62	0.63	0.65	0.70	0.83	0.88	0.84	0.86	0.81	0.85	0.83	0.77	0.80	0.84	0.88	1.05	1.08	1.11	1.13	1.02	0.90	0.78
12/31/2016	0.69	0.66	0.65	0.65	0.64	0.65	0.72	0.81	0.93	1.00	1.01	1.10	1.08	1.04	1.00	0.96	1.06	1.13	1.06	1.02	1.01	0.93	0.85	0.77

Division 5-16

Request:

Please provide the number of residential and commercial customers by service rate over the last five calendar years.

Response:

Please see Attachment DIV 5-16-1 for the number of Narragansett Gas residential and commercial customers by rate class, and Attachment DIV 5-16-2 for the number of Narragansett Electric residential and commercial customers by rate class over the last five calendar years.

(This response is identical to the Company's response to Division 1-16 in Docket No. 4780.)

Narragansett Electric - Monthly Gas Customer Count Per Rate Class

	Rate Class Description	Rate Class	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	2013		**Jan-13**	**Feb-13**	**Mar-13**	**Apr-13**	**May-13**	**Jun-13**	**Jul-13**	**Aug-13**	**Sep-13**	**Oct-13**	**Nov-13**	**Dec-13**
(1)	Residential - Non-Heating	10	25,865	25,856	25,885	25,836	25,744	25,678	25,516	25,456	25,479	25,503	25,593	25,648
(2)	Residential Low Income - Non-Heating	11	379	378	370	361	396	407	499	508	490	477	465	459
(3)	Residential - Heating - Rate	12	187,768	188,346	188,723	188,583	187,023	186,352	184,049	183,765	184,505	185,940	188,130	189,559
(4)	Residential Low Income	13	18,347	18,178	18,011	17,943	18,537	18,501	20,169	19,948	19,413	18,989	18,649	18,477
(5)	Small C&I	21	18,747	18,800	18,800	18,697	18,524	18,381	18,270	18,221	18,243	18,367	18,680	18,856
(6)	Medium C&I	22	4,681	4,696	4,705	4,702	4,691	4,694	4,684	4,665	4,678	4,700	4,734	4,758
(7)	Large Low Load	33	450	454	452	453	450	448	448	455	450	452	457	460
(8)	Large High Load	23	185	185	184	185	185	185	186	180	177	177	177	177
(9)	Extra Large Low Load	34	37	37	38	37	37	37	37	38	38	37	37	37
(10)	Extra Large High Load	24	76	76	75	77	77	76	76	75	74	74	74	74
(11)	Non-Firm	60&61	20	19	19	19	18	18	17	18	17	16	17	17
(12)	Other	80	26	26	26	26	26	26	26	26	26	26	26	26
(13)	**Total**		**256,581**	**257,051**	**257,288**	**256,919**	**255,708**	**254,803**	**253,977**	**253,355**	**253,590**	**254,758**	**257,039**	**258,548**

	2014		**Jan-14**	**Feb-14**	**Mar-14**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**
(14)	Residential - Non-Heating	10	25,669	25,669	25,619	25,534	25,323	25,206	25,139	25,142	25,164	25,189	25,267	22,917
(15)	Residential Low Income - Non-Heating	11	456	454	505	546	635	649	661	646	625	616	595	396
(16)	Residential - Heating - Rate	12	190,600	191,238	190,140	189,436	186,752	185,530	184,685	184,971	185,559	187,029	189,421	193,252
(17)	Residential Low Income	13	18,264	18,119	19,422	19,820	20,986	21,040	21,171	20,661	20,163	19,713	19,450	19,392
(18)	Small C&I	21	18,995	19,020	19,027	18,879	18,642	18,453	18,350	18,358	18,280	18,396	18,636	18,812
(19)	Medium C&I	22	4,773	4,780	4,784	4,782	4,769	4,755	4,754	4,687	4,763	4,793	4,824	4,835
(20)	Large Low Load	33	463	466	467	467	466	464	465	462	459	461	464	469
(21)	Large High Load	23	178	180	180	179	181	182	184	184	172	173	175	172
(22)	Extra Large Low Load	34	35	36	36	36	36	36	35	36	36	36	36	36
(23)	Extra Large High Load	24	77	81	79	81	79	79	79	78	80	81	80	83
(24)	Non-Firm	60&61	15	14	16	16	16	15	14	14	14	14	12	11
(25)	Other	80	26	26	26	26	26	26	26	26	26	28	26	26
(26)	**Total**		**259,551**	**260,083**	**260,301**	**259,802**	**257,911**	**256,435**	**255,563**	**255,265**	**255,341**	**256,529**	**258,986**	**260,401**

Source: Company billing records

Narragansett Electric - Monthly Gas Customer Count Per Rate Class

Rate Class Description	Rate Class	(a) Jan-15	(b) Feb-15	(c) Mar-15	(d) Apr-15	(e) May-15	(f) Jun-15	(g) Jul-15	(h) Aug-15	(i) Sep-15	(j) Oct-15	(k) Nov-15	(l) Dec-15
2015													
(27) Residential - Non-Heating	10	22,933	22,962	22,940	22,713	22,631	21,735	21,706	21,773	21,746	21,806	21,853	21,931
(28) Residential Low Income - Non-Heating	11	403	402	413	545	568	460	457	452	435	421	413	405
(29) Residential - Heating - Rate	12	194,354	195,114	194,912	192,348	190,629	190,917	190,851	191,023	191,368	192,871	194,958	196,482
(30) Residential Low Income	13	19,211	19,060	19,671	21,828	22,454	22,164	21,700	21,198	20,672	20,292	19,980	19,718
(31) Small C&I	21	18,998	19,065	19,041	18,903	18,711	18,534	18,451	18,426	18,393	18,568	18,843	19,055
(32) Medium C&I	22	4,849	4,865	4,857	4,848	4,848	4,834	4,829	4,797	4,809	4,841	4,859	4,880
(33) Large Low Load	33	469	470	470	470	468	467	467	447	447	455	457	461
(34) Large High Load	23	174	172	172	173	173	174	174	163	162	162	161	161
(35) Extra Large Low Load	34	36	36	36	36	36	36	37	37	36	36	36	36
(36) Extra Large High Load	24	84	84	84	84	84	84	83	85	84	84	84	84
(37) Non-Firm	60&61	11	11	11	11	11	11	11	11	11	11	12	12
(38) Other	80	26	26	26	26	26	26	26	25	25	25	25	25
(39) **Total**		**261,548**	**262,267**	**262,633**	**261,985**	**260,639**	**259,442**	**258,792**	**258,437**	**258,188**	**259,572**	**261,681**	**263,250**

2016		**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**May-16**	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**Nov-16**	**Dec-16**
(40) Residential - Non-Heating	10	22,008	22,007	22,144	21,266	21,218	19,957	19,055	19,051	19,072	19,115	19,191	19,250
(41) Residential Low Income - Non-Heating	11	407	404	263	443	479	373	254	246	247	243	236	235
(42) Residential - Heating - Rate	12	197,596	198,171	205,450	199,739	198,166	198,481	199,328	199,329	199,718	200,965	202,786	204,265
(43) Residential Low Income	13	19,485	19,248	11,951	18,247	19,112	19,239	19,049	18,716	18,483	18,194	17,919	17,660
(44) Small C&I	21	19,232	19,250	19,212	19,134	19,032	18,846	18,738	18,599	18,586	18,742	18,961	19,196
(45) Medium C&I	22	4,899	4,898	4,906	4,903	4,895	4,878	4,878	4,936	4,964	4,996	5,013	5,039
(46) Large Low Load	33	461	462	463	461	459	457	457	451	452	457	460	462
(47) Large High Load	23	164	166	165	165	165	165	164	181	185	185	184	187
(48) Extra Large Low Load	34	36	36	36	36	36	36	36	34	34	34	34	34
(49) Extra Large High Load	24	84	84	84	84	84	84	85	91	91	91	91	91
(50) Non-Firm	60&61	11	11	11	11	11	11	10	10	10	10	10	10
(51) Other	80	25	25	25	25	25	25	25	25	25	25	25	25
(52) **Total**		**264,408**	**264,762**	**264,710**	**264,514**	**263,682**	**262,552**	**262,079**	**261,669**	**261,867**	**263,057**	**264,910**	**266,454**

Source: Company billing records

Narragansett Electric - Monthly Gas Customer Count Per Rate Class

Rate Class Description	Rate Class	(a) Jan-17	(b) Feb-17	(c) Mar-17	(d) Apr-17	(e) May-17	(f) Jun-17	(g) Jul-17	(h) Aug-17	(i) Sep-17	(j) Oct-17	(k) Nov-17	(l) Dec-17
2017													
(53) Residential - Non-Heating	10	19,252	19,272	19,308	19,292	19,196	19,125	19,086	19,067	18,725	18,333	18,380	18,400
(54) Residential Low Income - Non-Heating	11	233	232	226	262	306	318	321	320	281	211	206	212
(55) Residential - Heating - Rate	12	205,147	205,721	206,060	203,897	201,692	200,727	200,418	200,583	201,524	204,611	206,954	208,274
(56) Residential Low Income	13	17,419	17,244	17,050	19,038	20,347	20,312	20,163	19,817	19,422	17,282	16,717	16,424
(57) Small C&I	21	19,289	19,315	19,296	19,154	18,983	18,835	18,748	18,668	18,640	18,702	18,774	19,149
(58) Medium C&I	22	5,048	5,057	5,068	5,063	5,051	5,042	5,038	5,056	5,074	5,080	5,321	5,123
(59) Large Low Load	33	462	463	463	462	459	459	458	455	452	457	460	460
(60) Large High Load	23	187	187	187	187	187	187	187	187	184	185	185	187
(61) Extra Large Low Load	34	34	35	35	35	35	35	35	32	31	30	30	31
(62) Extra Large High Load	24	90	90	89	90	88	88	88	84	84	84	85	85
(63) Non-Firm	60&61	10	10	10	10	11	11	11	11	11	11	11	11
(64) Gas Lights	80	25	25	25	25	25	25	25	25	25	25	25	25
(65) **Total**		**267,196**	**267,651**	**267,817**	**267,515**	**266,380**	**265,164**	**264,578**	**264,305**	**264,453**	**265,011**	**267,148**	**268,381**

Source: Company billing records

Narragansett Electric - Monthly Electric Customer Count Per Rate Class

	Rate Class Description	Rate Class	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	2013		**Jan-13**	**Feb-13**	**Mar-13**	**Apr-13**	**May-13**	**Jun-13**	**Jul-13**	**Aug-13**	**Sep-13**	**Oct-13**	**Nov-13**	**Dec-13**
(1)	Basic Residential	A-16	389,624	390,026	390,967	391,280	391,502	392,012	391,124	390,474	392,086	391,335	391,966	391,673
(2)	Low Income	A-60	42,364	42,329	42,238	42,266	42,342	42,287	42,398	42,204	41,921	41,589	41,285	41,032
(3)	Large Demand Backup Service	B-32	5	5	5	5	4	4	4	3	4	4	4	4
(4)	Optional Large Demand Backup Service	B-62	1	1	1	1	1	1	1	1	1	1	1	1
(5)	Small C&I	C-06	49,069	49,100	49,147	49,112	49,207	49,103	49,066	49,136	49,286	49,054	49,241	49,000
(6)	General C&I	G-02	7,926	8,380	8,385	8,357	8,373	8,346	8,345	8,288	8,296	8,158	8,273	8,048
(7)	200 kW Demand	G-32	1,009	1,071	1,062	1,059	1,067	1,061	1,064	1,059	1,056	1,050	1,049	1,027
(8)	3000 kW Demand	G-62	12	13	12	12	13	11	12	12	12	13	11	12
(9)	Station Power Delivery and Reliability Service	M-1	3	3	3	3	3	3	3	3	3	3	3	3
(10)	Private Lighting	S-10	2,616	2,610	2,608	2,594	2,581	2,575	2,571	2,569	2,564	2,568	2,559	2,553
(11)	General Street and Area Lighting	S-14	381	381	379	379	379	380	380	380	380	379	378	379
(12)	Electric Propulsion	X-01	1	1	1	1	1	1	1	1	1	1	1	1
(13)	**Total**		**493,011**	**493,920**	**494,808**	**495,069**	**495,473**	**495,784**	**494,969**	**494,130**	**495,610**	**494,155**	**494,771**	**493,733**
	2014		**Jan-14**	**Feb-14**	**Mar-14**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**
(14)	Basic Residential	A-16	391,721	391,300	393,727	392,776	392,918	393,027	387,954	387,431	389,134	389,507	388,918	389,777
(15)	Low Income	A-60	40,897	40,697	40,867	41,292	41,781	41,482	46,255	45,597	45,128	44,626	44,070	43,806
(16)	Large Demand Backup Service	B-32	4	4	4	4	4	4	4	4	4	5	5	5
(17)	Optional Large Demand Backup Service	B-62	1	2	1	1	1	1	1	2	1	0	0	0
(18)	Small C&I	C-06	49,068	49,378	49,328	49,128	49,233	49,230	49,216	49,031	49,355	49,394	49,043	49,117
(19)	General C&I	G-02	8,217	8,311	8,192	8,145	8,297	8,224	8,168	8,087	8,250	8,235	8,045	8,193
(20)	200 kW Demand	G-32	1,039	1,036	1,025	1,037	1,060	1,044	1,053	1,052	1,054	1,051	1,029	1,047
(21)	3000 kW Demand	G-62	13	12	13	11	12	10	11	11	11	12	10	11
(22)	Station Power Delivery and Reliability Service	M-1	3	2	2	3	3	3	3	3	3	3	3	3
(23)	Private Lighting	S-10	2,550	2,550	2,549	2,561	2,522	2,516	2,518	2,514	2,517	2,516	2,509	2,506
(24)	General Street and Area Lighting	S-14	378	381	379	379	379	382	382	382	382	381	381	381
(25)	Electric Propulsion	X-01	1	1	1	1	1	1	1	1	1	1	1	1
(26)	**Total**		**493,892**	**493,674**	**496,088**	**495,338**	**496,211**	**495,924**	**495,566**	**494,115**	**495,840**	**495,731**	**494,014**	**494,847**

Source: Company billing records

Narragansett Electric - Monthly Electric Customer Count Per Rate Class

	Rate Class Description	Rate Class	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	2015		**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	**May-15**	**Jun-15**	**Jul-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Nov-15**	**Dec-15**
(27)	Basic Residential	A-16	390,035	390,486	389,748	388,917	389,171	389,040	387,419	387,810	389,373	389,524	390,137	391,418
(28)	Low Income	A-60	43,504	44,499	45,478	46,990	47,534	47,175	46,509	46,084	45,767	45,272	44,937	44,708
(29)	Large Demand Backup Service	B-32	5	5	5	5	5	5	5	5	5	5	5	5
(30)	Optional Large Demand Backup Service	B-62	0	0	0	0	0	0	0	0	0	0	0	0
(31)	Small C&I	C-06	49,071	49,523	49,565	49,477	49,435	49,534	49,344	49,334	49,576	49,516	51,509	49,667
(32)	General C&I	G-02	8,043	8,145	8,057	8,145	8,174	8,216	8,206	8,274	8,246	8,244	8,640	8,246
(33)	200 kW Demand	G-32	1,019	1,029	1,024	1,041	1,041	1,050	1,044	1,054	1,049	1,036	1,079	1,038
(34)	3000 kW Demand	G-62	10	11	12	12	12	12	10	12	12	12	12	12
(35)	Station Power Delivery and Reliability Service	M-1	3	3	3	3	3	3	3	3	3	3	3	3
(36)	Customer Owned Lighting	S-05	0	0	0	0	0	0	0	0	0	0	0	0
(37)	Decorative Lighting	S-06	1	1	1	0	0	0	0	0	0	0	0	0
(38)	Private Lighting	S-10	2,504	2,491	2,487	2,479	2,475	2,464	2,458	2,452	2,446	2,447	2,469	2,443
(39)	General Street and Area Lighting	S-14	380	380	380	381	389	381	380	379	379	379	380	379
(40)	Electric Propulsion	X-01	1	1	1	1	1	1	1	1	1	1	1	1
(41)	**Total**		**494,576**	**496,574**	**496,761**	**497,451**	**498,240**	**497,881**	**495,379**	**495,408**	**496,857**	**496,439**	**499,172**	**497,920**

	2016		**Jan-16**	**Feb-16**	**Mar-16**	**Apr-16**	**May-16**	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**	**Nov-16**	**Dec-16**
(42)	Basic Residential	A-16	390,519	390,177	400,444	401,892	393,030	400,605	398,573	400,122	399,661	401,133	403,297	385,442
(43)	Low Income	A-60	44,176	45,522	37,256	33,800	34,221	35,127	35,080	34,946	34,517	34,783	34,504	32,416
(44)	Large Demand Backup Service	B-32	5	5	5	5	5	5	5	5	5	5	5	4
(45)	Optional Large Demand Backup Service	B-62	0	0	0	0	0	0	0	0	0	0	0	0
(46)	Small C&I	C-06	49,675	49,635	49,950	49,744	49,187	49,586	49,638	49,752	49,725	49,871	50,077	47,969
(47)	General C&I	G-02	8,366	8,247	8,289	8,234	8,221	8,179	8,160	8,230	8,296	8,175	8,294	7,965
(48)	200 kW Demand	G-32	1,057	1,041	1,040	1,045	1,045	1,041	1,041	1,041	1,047	1,037	1,041	1,014
(49)	3000 kW Demand	G-62	12	13	12	11	12	12	12	12	12	12	12	12
(50)	Station Power Delivery and Reliability Service	M-1	3	3	3	3	3	2	3	3	3	3	3	3
(51)	Customer Owned Lighting	S-05	0	0	0	0	0	0	0	0	0	2	2	2
(52)	Decorative Lighting	S-06	0	0	0	0	0	0	0	0	0	0	0	0
(53)	Private Lighting	S-10	2,446	2,439	2,429	2,428	2,418	2,372	2,368	2,367	2,357	2,362	2,360	2,351
(54)	General Street and Area Lighting	S-14	379	377	377	378	379	367	366	366	365	365	363	365
(55)	Electric Propulsion	X-01	1	1	1	1	1	1	1	1	1	1	1	1
(56)	**Total**		**496,639**	**497,460**	**499,806**	**497,541**	**488,522**	**497,297**	**495,247**	**496,845**	**495,989**	**497,749**	**499,959**	**477,544**

Source: Company billing records

Narragansett Electric - Monthly Electric Customer Count Per Rate Class

	Rate Class Description	Rate Class	(a) Jan-17	(b) Feb-17	(c) Mar-17	(d) Apr-17	(e) May-17	(f) Jun-17	(g) Jul-17	(h) Aug-17	(i) Sep-17	(j) Oct-17	(k) Nov-17	(l) Dec-17
	2017													
(57)	Basic Residential	A-16	399,827	403,861	387,046	394,396	400,555	404,910	404,350	405,044	403,638	388,347	412,276	391,745
(58)	Low Income	A-60	33,909	33,542	31,591	32,580	35,339	35,515	35,333	34,615	32,262	29,606	28,123	25,584
(59)	Large Demand Backup Service	B-32	4	4	4	5	5	4	4	5	6	4	5	5
(60)	Optional Large Demand Backup Service	B-62	0	0	0	0	0	0	0	0	0	0	0	0
(61)	Small C&I	C-06	50,072	50,530	48,999	50,024	50,075	50,826	50,751	50,680	50,462	48,684	50,963	48,502
(62)	General C&I	G-02	8,308	8,244	8,257	8,296	8,129	8,320	8,298	8,260	8,162	8,157	8,358	7,952
(63)	200 kW Demand	G-32	1,045	1,023	1,033	1,048	1,037	1,036	1,024	1,038	1,000	1,032	1,017	998
(64)	3000 kW Demand	G-62	13	13	13	13	12	13	13	13	13	13	13	12
(65)	Station Power Delivery and Reliability Service	M-1	3	3	3	3	3	3	3	3	3	3	3	3
(66)	Customer Owned Lighting	S-05	2	2	2	2	22	102	49	80	57	97	100	110
(67)	Decorative Lighting	S-06	1	1	1	1	1	1	1	1	1	1	1	1
(68)	General Street and Area Lighting	S-10	2,344	2,345	2,335	2,331	2,321	2,314	2,296	2,293	2,272	2,260	2,248	2,243
(69)	Private Lighting	S-14	365	363	362	360	354	330	334	330	317	317	309	309
(70)	Electric Propulsion	X-01	1	1	1	1	1	1	1	1	1	1	1	1
(71)	**Total**		**495,894**	**499,932**	**479,647**	**489,060**	**497,854**	**503,375**	**502,457**	**502,363**	**498,194**	**478,522**	**503,417**	**477,465**

Source: Company billing records

Division 5-17

Request:

Please provide a list of all energy efficiency, conservation, and demand response programs – collectively, demand-side management (DSM) projects – currently offered by the Company, including the names and brief descriptions of the programs.

Response:

Please see Attachment DIV 5-17 for Bates Pages 10-13 from Docket 4654 – The Narragansett Electric Company d/b/a National Grid 2017 Energy Efficiency Program Plan as filed on October 17, 2016 for a list of programs currently offered by the Company and brief descriptions of those programs.

(This response is identical to the Company's response to Division 1-17 in Docket No. 4780).

Prepared by or under the supervision of: John Leana

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

In Re: The Narragansett Electric Company d/b/a National Grid Energy Efficiency Program Plan for 2017	**Docket No. 4654**

ENERGY EFFICIENCY PROGRAM PLAN FOR 2017

SETTLEMENT OF THE PARTIES

October 17, 2016

III. Delivering 2017 Goals

National Grid will build on its almost thirty years of experience in order to deliver the energy and cost savings goals in this Plan.[14]

A. Residential Programs

In 2017, the Parties agree to continue the residential programs offered in 2016. The Parties also agree to offer new programs and demonstrate the development of new technologies for potential inclusion in programs in future years. The programs are summarized below and described in further detail in Attachment 1. The description of each program includes proposed changes from 2016 that are intended to help meet the savings targets for 2017.

Table 3. Proposed Residential Energy Efficiency Programs	
Residential Buildings Efficiency Programs	
EnergyWise Program (Funded by Gas and Electric)	Energy*Wise* offers single-family customers home energy assessments and information on their actual energy usage. Participants in this program receive recommendations and technical assistance as well as financial incentives to replace inefficient lighting fixtures, appliances, thermostats, and insulation levels with models that are more energy efficient. The program addresses base load electric use and heating and cooling energy loads in all residential buildings. The program recommends efficient products that are delivered through National Grid's various programs as well as solar opportunities provided through Statewide solar initiatives. The program will continue to deliver finance opportunities to customers such as the Heat Loan and support the Residential Property Assessed Clean Energy (PACE) when it begins in the latter half of 2017. The program will also continue to offer weatherization incentives to customers who heat with oil and propane.
Multifamily Programs Income Eligible, Residential and Commercial sectors (funded by Gas and Electric)	Comprehensive energy services for multifamily customers include energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs.

[14] Throughout the program year, the Parties may consider additional enhancements beyond those identified in this Plan as more information becomes available to support an informed review of those potential changes. As part of this process of identifying additional enhancements, in addition to continuing to meet with the Collaborative, the Company will continue its work sessions with the EERMC's consultants.

Income Eligible Single Family (Funded by Gas and Electric)	Income Eligible Services, also known as the Single Family Low Income Services, are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments will be offered: (1) lighting and appliance focus, (2) heating and weatherization focus, and (3) comprehensive focus. Customers qualifying for LIHEAP are eligible and receive all services and equipment upgrades at no cost.

Residential Buildings Efficiency Programs	
Residential New Construction (Funded by Gas and Electric)	The program promotes the construction of high-performing energy efficient single family, multifamily, and low income homes, as well as the education of builders, tradesmen, designers, and code officials. RNC has been overhauled over the past few years to make it more performance oriented.
Education Programs (Funded by Electric)	The Company promotes energy education to private and public schools and youth groups through the National Energy Education Development (N.E.E.D) Program. This program provides curriculum materials and training to students and teachers in grades K-12.
Residential Home Energy Report Program (Funded by Electric and Gas)	The Company will continue to deliver Home Energy Reports that offer enhanced feedback tools to inspire customers to take actions that reduce their energy consumption and also increase their participation in other energy efficiency programs.
Community Based Initiatives (C&I and Residential, Funded by Electric and Gas)	The initiative is designed to leverage trusted community partnerships and develop targeted marketing strategies in order to promote all energy efficiency programs, residential and commercial, in specific targeted communities or businesses.
ENERGY STAR® Lighting (Funded by Electric Only)	This is an initiative implemented jointly with other regional utilities. It provides discounts to customers for the purchase of ENERGY STAR® lighting through instant rebates, special promotions at retail stores, mail-order catalog, pop-up retailer, and social marketing campaigns.
Residential Consumer Products (Funded by Electric Only)	The program is run in collaboration with other regional utilities to promote the purchase of high efficiency household appliances, including kitchen appliances and electronics. These appliances carry an ENERGY STAR® label. The program also offers refrigerator recycling, which promotes more efficient refrigerators while removing non-efficient units from the market.
ENERGY STAR® HVAC Program (Funded by Electric and Gas)	This program promotes the installation of high efficiency central air conditioners for electric customers and new energy efficient natural gas related equipment including boilers, furnaces, water heating equipment, thermostats, boiler reset controls, and furnaces equipped with high efficiency fans. The program provides training of contractors in installation, testing of the high efficiency systems, tiered rebates for new ENERGY STAR® systems, and incentives for checking new and existing systems. The program also includes the oil and propane heating equipment rebates.

Residential Demonstration and Research and Development (Funded by Electric and Gas)	The demonstrations test innovative technologies for saving both gas and electricity.

B. Residential Income Eligible Programs

The Company and the Collaborative want customers who have a high energy burden and/or difficulty paying their electric bills to participate in, and benefit from, the Company's energy efficiency programs, especially in these difficult economic times. For that reason, this segment of the customer base is designated as a unique sector, and funding for this sector will be subsidized by both non-low-income residential customers and commercial and industrial customers using 13% of total implementation funding for the electric programs, and 21% for natural gas programs.

In addition to the Income Eligible Single Family and Multifamily programs, the Residential New Construction Program also works with housing authorities and developers to build energy-efficient multifamily properties. Additional details about the services offered to economically disadvantaged customers are described in the residential programs in Attachment 1.

C. Commercial and Industrial Programs

The Parties agree to continue in 2017 the commercial and industrial programs offered in 2016, and pilot the development of new technologies for potential inclusion in programs in future years. These programs are summarized in Table 4 below.

Table 4. Proposed Commercial and Industrial Energy Efficiency Programs	
Small Business Direct Install (Gas and Electric)	The Small Business Direct Install Program provides direct installation of energy efficient lighting, non-lighting retrofit measures, and gas efficiency measures. Electric customers with average monthly demand of less than 200 kW are eligible to participate. There is no eligibility criterion for gas consumption. The program's lighting and non-refrigeration measures are delivered through one labor and one product vendor selected through a competitive bidding process. The customer pays 30% of the total cost of a retrofit. This amount is discounted 15% for a lump sum payment or the customer has the option of spreading the payments over a two-year period interest free.

Table 4. Proposed Commercial and Industrial Energy Efficiency Programs	
Large Commercial Retrofit (Gas and Electric)	Large Commercial Retrofit is a comprehensive retrofit program designed to promote the installation of energy efficient equipment such as lighting, motors, and heating, ventilation and air conditioning (HVAC) systems, thermal envelope measures, and custom measures in existing buildings. All commercial, industrial, and institutional customers are eligible to participate. The Company offers technical assistance to customers to help them identify cost-effective efficiency opportunities, and pays incentives to assist in defraying part of the material and labor costs associated with the energy efficient measures.
Large Commercial New Construction (Gas and Electric)	Promotes energy efficient design and construction practices in new and renovated commercial, industrial, and institutional buildings. The program also promotes the installation of high efficiency equipment in existing facilities during building remodeling and at the time of equipment failure and replacement. Large Commercial New Construction is known as a lost opportunities program because a customer who does not install energy efficient equipment at the time of new construction or equipment replacement will likely never make the investment for that equipment or will make the investment at a much greater cost at a later time. The program provides both technical and design assistance to help customers identify efficiency opportunities in their new building designs and to help them refine their designs to pursue these opportunities. The program also offers incentives to eliminate or significantly reduce the incremental cost of high efficiency measures over standard efficiency measures. Incentives are also offered to owner's design teams for their time and effort to meet program requirements. Operations Verification or quality assurance is also offered to ensure that the equipment and systems operate as intended.
Commercial and Industrial Demonstrations and Research and Development (Funded by Electric and Gas)	The demonstrations test innovative technologies for saving both gas and electricity.

Descriptions of these programs are provided in Attachment 2. Included in the description of each program are proposed changes from 2016 that are intended to help meet the savings targets for 2017.

D. Other Program Highlights

1. Overcoming Financial Barriers

Division 5-18

Request:

Please provide a list of all DSM program that are expected to be deployed in the upcoming calendar year.

Response:

Please see Attachment DIV 5-18 for Bates Pages 12-16 from Docket 4755 – The Narragansett Electric Company d/b/a National Grid 2018 Energy Efficiency Program Plan as filed on November 1, 2017 for a list of programs to be offered by the Company in 2018 and brief descriptions of those programs.

(This response is identical to the Company's response to Division 1-18 in Docket No. 4780).

Prepared by or under the supervision of: John Leana

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

In Re: The Narragansett Electric Company d/b/a National Grid Annual Energy Efficiency Plan for 2018	**Docket No. 4755**

ANNUAL ENERGY EFFICIENCY PLAN FOR 2018

SETTLEMENT OF THE PARTIES

November 1, 2017

Table 3. Residential Energy Efficiency Programs	
EnergyWise Program (Funded by Electric and Gas)	Energy*Wise* offers single-family customers home energy assessments and information regarding their actual energy usage. Participants in this program receive recommendations and technical assistance as well as financial incentives to replace inefficient lighting fixtures, appliances, thermostats, and insulation levels with models that are more energy efficient. The program addresses base load electric use and heating and cooling energy loads in all residential buildings. The program recommends efficient products that are delivered through National Grid's various programs as well as solar opportunities provided through statewide solar initiatives. The program will continue to deliver finance opportunities to customers such as the Heat Loan and the Rhode Island Infrastructure Bank's residential financing opportunities. In 2018, the Company plans to establish a $500,000 revolving loan opportunity for the Capital Loan Fund to support more EnergyWise customers.
Multifamily Programs Income Eligible, Residential and Commercial sectors (Funded by Electric and Gas)	Comprehensive energy services for multifamily customers include energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs. In 2018, the Company will use a number of avenues to meet the needs of its customers including: heat pumps and smart technologies, a customer centric recruiting process, building benchmarking data, and a continued focus on finance opportunities
Income Eligible Single Family (Funded by Electric and Gas)	Income Eligible Services, also known as the Single Family Low Income Services, are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments will be offered: (1) lighting and appliance focus, (2) heating and weatherization focus, and (3) comprehensive focus. Customers who qualify for LIHEAP are eligible and receive all services and equipment upgrades at no cost. In 2018, the Company will collaborate with the Rhode Island Department of Human Services (RI DHS) to leverage job development and explore the possibility of new program offerings like smart home technologies, Wi-Fi thermostats, and mini splits.

Residential New Construction (Funded by Electric and Gas)	The program promotes the construction of high-performing energy efficient single family, multifamily, and low income homes, as well as the education of builders, tradesmen, designers, and code officials. In 2018, the Company will adopt a new User Defined Reference Home (UDRH) baseline that will reflect the current energy efficiency of new construction single-family homes in Rhode Island.
Residential Home Energy Report Program (Funded by Electric and Gas)	The Home Energy Reports (HER) program is the Company's key program to achieve energy savings through changes in customer behavior by presenting personalized energy usage data and encouraging desired behaviors to reduce energy consumption. The Company will continue to deliver Home Energy Reports that offer enhanced feedback tools to inspire customers to take actions that reduce their energy consumption and also increase their participation in other energy efficiency programs.
ENERGY STAR® Lighting (Funded by Electric Only)	This is an initiative implemented jointly with other regional utilities. It provides discounts to customers for the purchase of ENERGY STAR® lighting through instant rebates, special promotions at retail stores, pop-up retailer, and social marketing campaigns. In 2018, there will be additional emphasis on providing incentives to hard-to-reach communities where the traditional retail channels may not have as large of a presence as discount retailers. In addition, the Company will continue to use online flash sales in 2018.
Residential Consumer Products (Funded by Electric Only)	This program is run in collaboration with other regional utilities to promote the purchase of high efficiency household appliances, including kitchen appliances and electronics. These appliances carry an ENERGY STAR® label. The program also offers refrigerator recycling, which promotes more efficient refrigerators while removing non-efficient units from the market. In 2018, the program will support dehumidifiers, dryers, refrigerator and freezer recycling, room air cleaners, room air conditioners, advanced power strips, and efficient shower heads. The Company will also support federal appliance and equipment standards development and renew efforts to advance efforts at the state level.
ENERGY STAR® HVAC Program (Funded by Electric and Gas)	This program promotes the installation of high efficiency central air conditioners for electric customers and new energy efficient natural gas related equipment including boilers, furnaces, water heating equipment, thermostats, boiler reset controls, and furnaces equipped with high efficiency fans. The program provides training of contractors in installation, testing of the high efficiency systems, tiered rebates for new ENERGY STAR® systems, and incentives for checking new and existing systems. The program also includes oil and propane heating equipment rebates.

Community Based Initiatives (C&I and Residential, Funded by Electric and Gas)	The initiative is designed to leverage trusted community partnerships and develop targeted marketing strategies in order to promote all energy efficiency programs, residential and commercial, in specific targeted communities or businesses.
Residential Demonstration and Research and Development (Funded by Electric and Gas)	Under this program, the demonstrations test innovative technologies. In 2018, the Company innovative technologies that the Company plans to test include energy storage, emerging lighting controls, energy monitoring, zero energy homes, and other new technologies.
Education Programs (Funded by Electric Only)	The Company promotes energy education to private and public schools and youth groups through the National Energy Education Development (N.E.E.D) Program. This program provides curriculum materials and training to students and teachers in grades K-12.

b. Residential Income Eligible Programs

The Company and the Parties want customers who have a high energy burden and/or difficulty paying their electric bills to participate in, and benefit from, the Company's energy efficiency programs, especially in these difficult economic times. Therefore, this segment of the customer base is designated as a unique sector, and funding for this sector will be subsidized by both non-low-income residential customers and commercial and industrial customers using 13% of total implementation funding for the electric programs, and 24% for natural gas programs.

In addition to the Income Eligible Single Family and Multifamily programs, the Residential New Construction Program also works with housing authorities and developers to build energy-efficient multifamily properties. Additional details about the services offered to economically disadvantaged customers are described in the residential programs in Attachment 1.

c. Commercial and Industrial Programs

In 2018, the Parties agree to continue the commercial and industrial programs offered in 2017 and pilot the development of new technologies for potential inclusion in programs in future years. These programs are summarized in Table 4 below.

Table 4. Commercial and Industrial Energy Efficiency Programs	
Large Commercial New Construction Building Energy Code and Appliance Standards (Funded by Electric and Gas)	This program promotes energy efficient design and construction practices in new and renovated commercial, industrial, and institutional buildings. The program promotes and incentivizes the installation of high efficiency equipment in existing facilities during building remodeling and at the time of equipment failure and replacement. Large Commercial New Construction aims to prevent or mitigate lost opportunities because a customer who does not install energy efficient equipment at the time of new construction or equipment replacement will likely never make the investment for that equipment or will make the investment at a much greater cost at a later time. The program provides both technical and design assistance to help customers identify efficiency opportunities in their new building designs and to help them refine their designs to pursue these opportunities. Incentives are also offered to owner's design teams for their time and effort to meet program requirements. Operations Verification or quality assurance is also offered to ensure that the equipment and systems operate as intended. The program also promotes building code compliance and provides technical assistance in promoting new and improved appliance standards regulations. Support the development and adoption of the Stretch Building Code to support the States goals and objectives. Finally the program supports the States Zero Energy Building (ZEB) goals through engagement and development of ZEB programs in the future.
Large Commercial Retrofit (Funded by Electric and Gas)	Large Commercial Retrofit is a comprehensive retrofit program designed to promote the installation of energy efficient equipment such as lighting, motors, and heating, ventilation and air conditioning (HVAC) systems, thermal envelope measures, and custom measures in existing buildings. All commercial, industrial, and institutional customers are eligible to participate. The Company offers technical assistance to customers to help them identify cost-effective efficiency opportunities, and pays incentives to assist in defraying part of the material and labor costs associated with the energy efficient measures. The Company also offers education and training, such as the building operator certification (BOC) training, to support the implementation and adoption of energy efficiency.

Table 4. Commercial and Industrial Energy Efficiency Programs	
Small Business Direct Install (Funded by Electric and Gas)	The Small Business Direct Install Program provides direct installation of energy efficient lighting, non-lighting retrofit measures, and gas efficiency measures. Electric customers with average monthly demand of less than 200 kW are eligible to participate. There is no eligibility criterion for gas consumption. The program's lighting and non-refrigeration measures are delivered through one labor and one product vendor selected through a competitive bidding process. The Customer share of the total project cost of a retrofit is discounted 15% for a lump sum payment or the customer has the option of spreading the payments over a two-year period, interest free.
Commercial and Industrial Demonstrations and Research and Development (Funded by Electric and Gas)	The demonstrations test innovative technologies for saving both gas and electricity. In 2018, innovative technologies which are planned to be tested include: zero energy projects, Power over Ethernet (PoE) lighting system, performance based procurement, and indoor agriculture.

Attachment 2 includes descriptions of these programs. Included in the description of each program are proposed changes from 2017 that are intended to help meet the savings targets for 2018.

d. Participation

Each program described in this Plan seeks to drive customer participation to deliver the benefits of energy efficiency to customers throughout Rhode Island. The Plan is designed to provide equitable access to savings and programs across sectors and market segments. For 2018, the Company will continue to plan and report participation in 'net' terms, which takes into account free-ridership and spillover, which are commonly referred to as net-to-gross factors. This method of accounting for participants aligns participation numbers with energy savings numbers, which are already recorded in net terms. This approach provides a more accurate connection between energy savings and the number of customers who benefit from efficiency programs. Planned participation estimates are included in Attachment 5, Table E-7 and Attachment 6, Table G-7.

The following table describes the definitions for how National Grid projects, tracks, and reports participation in the efficiency programs.

Division 5-19

Request:

For each current DSM program, please provide the annual number of customers participating in the program, by rate schedule, for each of the past five calendar years.

Response:

The following tables[1] present annual customer participation counts for current demand side management (DSM) programs (by fuel type) over the past five calendar years. Annual counts are not broken down by rate schedule as the Company does not track participation in this manner. Participation for residential new construction is tracked by number of housing units solely as accounts do not yet exist.

Table 1: Electric Participation by Account 2012-2016

Sector	Program	Annual Counts				
		2012	2013	2014	2015	2016
Residential	HVAC	1,414	3,049	2,445	2,091	1,978
	Products	9,520	6,254	6,922	4,461	2,622
	EnergyWise Single Family	6,760	8,645	9,898	11,665	9,567
	EnergyWise Multi Family	2,626	3,531	5,277	8,014	11,408
	Residential Subtotal	19,729	20,774	23,776	25,561	25,103
	% Unique Program Participants	97%	97%	97%	97%	98%
Income Eligible	Income Eligible Single Family	2,654	2,646	3,054	2,851	3,016
	Income Eligible Multi Family	1,410	2,010	3,104	1,383	1,999
	Income Eligible Subtotal	4,062	4,656	6,158	4,234	5,023
	% Unique Program Participants	100%	100%	100%	100%	100%
Commercial	New Construction	162	167	169	236	251
	Retrofit	405	350	432	459	400
	Small Business	1,282	1,175	960	1,049	797
	Commercial Subtotal	1,808	1,651	1,513	1,682	1,380
	% Unique Program Participants	98%	98%	97%	96%	95%
Portfolio Total		25,545	27,032	31,307	31,448	31,449

[1] Per the Company's 2016 Energy Efficiency Year-End Report filed with the PUC in Docket No. 4580 available at: http://www.ripuc.org/eventsactions/docket/4580-NGrid-2016AnnualRept(5-1-17).pdf.

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Table 2: Gas Participation by Account 2012-2016

Sector	Program	Annual Counts 2012	2013	2014	2015	2016
	HVAC	6,383	4,865	3,037	1,980	1,652
	EnergyWise Single Family	1,413	1,946	2,737	2,830	3,252
	EnergyWise Multi Family	1,792	762	3,146	4,291	5,394
	Residential Subtotal	9,338	7,352	8,662	8,909	10,112
Residential	% Unique Program Participants	97%	97%	97%	98%	98%
	Income Eligible Single Family	388	398	539	529	722
	Income Eligible Multi Family	48	261	531	532	1,121
	Income Eligible Subtotal	436	659	1,070	1,061	1,841
Income Eligible	% Unique Program Participants	100%	100%	100%	100%	100%
	New Construction	112	161	115	134	206
	Retrofit	431	476	159	656	611
	Small Business	160	111	297	121	50
	Commercial Subtotal	678	725	549	892	852
Commercial	% Unique Program Participants	96%	97%	96%	98%	98%
Portfolio Total		10,437	8,728	10,271	10,462	12,406

Table 3: Electric Participation by Housing Units 2012-2016

	Annual Housing Units				
Program	**2012**	**2013**	**2014**	**2015**	**2016**
Residential New Construction	406	473	573	442	526
EnergyWise Multifamily	2,660	3,539	5,322	7,710	7,783
Income Eligible Multifamily	3,878	5,370	5,977	4,610	5,366
Portfolio Total	**6,944**	**9,382**	**11,872**	**12,762**	**13,675**

Table 4: Gas Participation by Housing Units 2012-2016

	Annual Housing Units				
Program	**2012**	**2013**	**2014**	**2015**	**2016**
C&I Multifamily	0	1,066	939	2,345	2,982
Residential New Construction	252	425	500	366	341
EnergyWise Multifamily	1,569	984	2,496	3,147	2,232
Income Eligible Multifamily	977	2,773	3,090	3,956	4,701
Portfolio Total	**2,798**	**5,248**	**7,025**	**9,814**	**10,256**

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Please note the preceding counts do not include participants in the Home Energy Reports, ENERGY STAR Lighting, and C&I Upstream Lighting programs. Lighting programs do not collect account information while the Home Energy Reports program is a statewide program covering approximately 80 percent of Rhode Island residential customers.

(This response is identical to the Company's response to Division 1-19 in Docket No. 4780.)

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Division 5-20

Request:

Please provide the number of Income Eligible customers each year for the most recent five calendar years.

Response:

Please see Attachments DIV 5-16-1, rate class 11 and rate class 13 for the number of gas income eligible customers, and Attachments DIV 5-16-2, rate class A-60 for the number of electric income eligible customers for the most recent five calendar years.

(This response is identical to the Company's response to Division 1-20 in Docket No. 4780.)

Division 5-21

Request:

Refer to Schedule PST-1, Chapter 5, page 1 regarding company-owned charging stations.

a. Please discuss whether any company-owned charging stations are operated by third-party vendors.

b. Please identify whether the site host is the customer of record for each charging station, or whether the Company is the customer of record.

c. Please describe whether and how EV drivers pay to use the station, and whether payment is on a time basis, kWh basis, or some other basis.

d. Please provide the date of installation for each station.

e. Please provide data showing the utilization of each station, and the hours during which the stations are used.

f. Please provide a map of the locations of the Company's charging stations.

g. Please describe how the decision regarding where to locate stations is made.

Response:

a. Property owners host the 49 Narragansett Electric-owned stations under agreement with Narragansett Electric, wherein the property owner (a/k/a "site host") pays the electric bill and ensures dedicated driver access to parking. Narragansett Electric collaborates with site hosts on determining pricing charged to drivers, and Narragansett Electric pays for ongoing station operating, maintenance, and replacement costs.

Narragansett Electric installed these stations using grant funds from the Rhode Island Office of Energy Resources, in partnership with charging equipment vendor and network service provider, ChargePoint. Narragansett Electric pays ChargePoint an annual fee for station network service, including telecommunications capability (cell service) and station management applications. Narragansett Electric contracts with a Rhode Island-based electrical contractor for station maintenance, repair, and replacement.

No third-parties are involved with station operation, other than the property owners (site hosts), as described above.

b. The site host pays the electric bill for the station and, therefore, is the customer of record.

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c. Of the 49 stations, site hosts of 47 stations provide drivers with charging service at no cost. Driver pricing is in effect at two site host locations. At one, the station charges $0.10 per kWh. Another station provides four hours of free charging before charging $1.00 per hour.

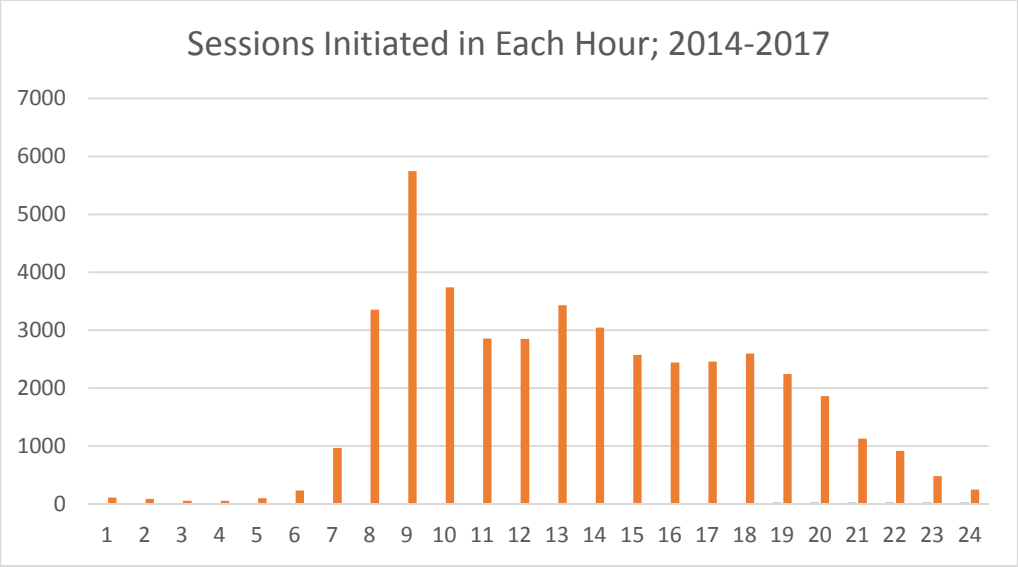
d. Please see Attachment DIV 5-21 for the requested information.

e. Between 2014 and 2017, approximately 1,728 unique drivers have charged at these publicly-accessible stations, likely including a large portion of the approximately 1,000 EVs registered in Rhode Island, as well as many drivers who do not live in the state.

Annual charging sessions from 2014 through 2017 for each of the 49 stations is provided in Attachment DIV 5-21. Total annual charging sessions have increased approximately 30 percent year-over-year from 2014 (after installations were completed) through 2017, as shown in the table below.

	2014	2015	2016	2017	Compound Annual Growth Rate
Annual Sessions	6,763	9,817	12,113	14,882	30%

Total charging sessions initiated in each hour for each station from 2014 through 2017 are also shown in Attachment DIV 5-21. The aggregate session data for the full set of 49 stations is summarized in the chart below.



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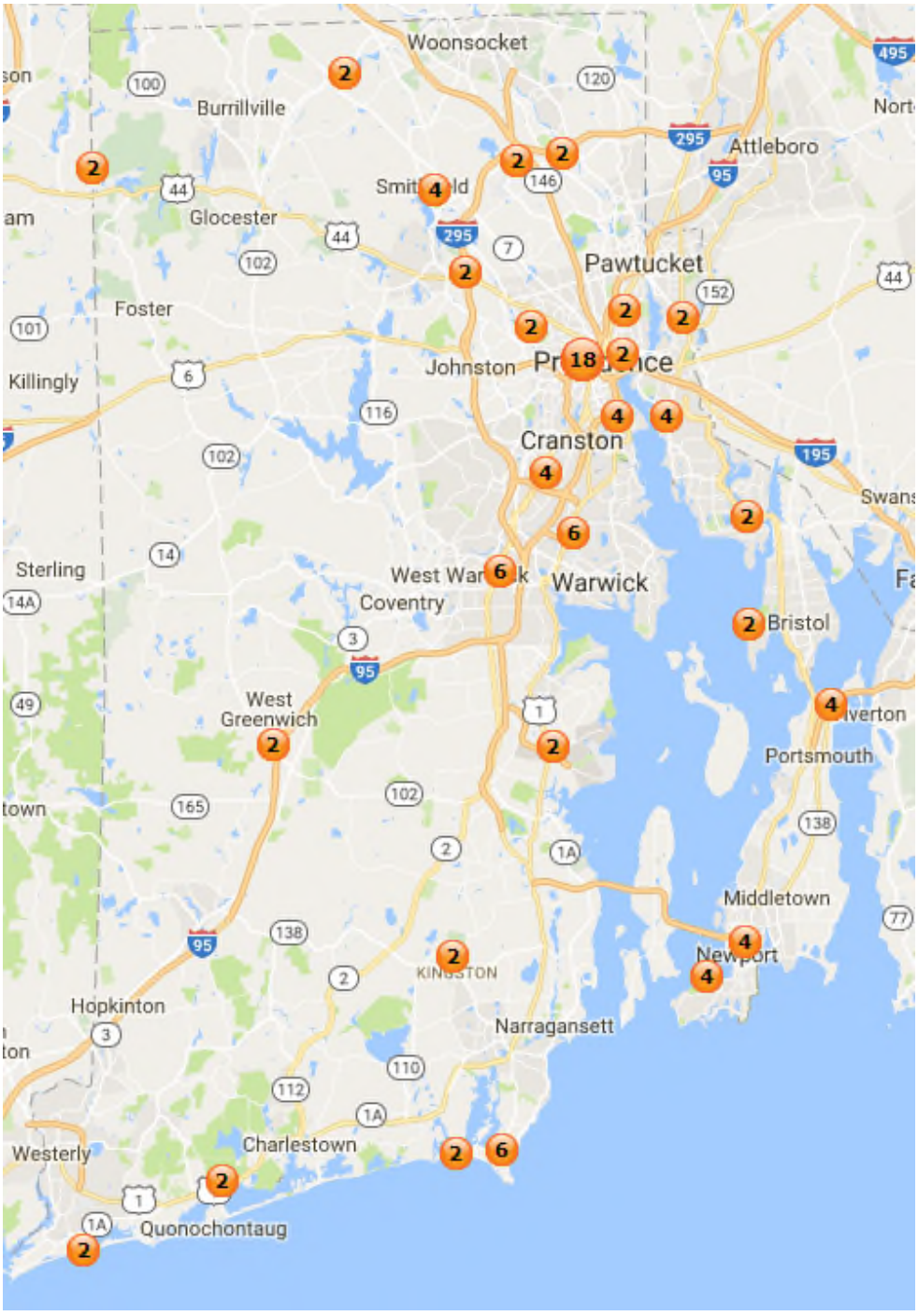
f. Addresses for the stations are included in Attachment DIV 5-21. A map view is also provided below.



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g. The Company solicited prospective site hosts from among its customer base in 2013. Property owners who were willing to sign the agreement with Narragansett Electric, including committing to pay for the cost of electricity and to dedicate a parking space(s) for the charging station and EV drivers, were provided with the stations and installation service.

(This response is identical to the Company's response to Division 1-21 in Docket No. 4780.)

	Station Details							Annual Charging Sessions			
	Location Name	Address 1	City	State	Postal Code	No. of Ports	Station Activation Date	2014	2015	2016	2017
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
(1)	Atlantic Beach- Westerly RI	300-398 Atlantic Ave	Westerly	RI	2891	2	8/26/2013 7:02	174	89	95	152
(2)	Blackstone Valley Visitors Center	Blackstone River Bikeway	Lincoln	RI	2865	2	9/9/2013 10:16	47	35	50	95
(3)	Bradley Hospital	1011 Veterans Memorial Pkwy	East Providence	RI	2915	2	9/5/2013 9:38	158	100	152	243
(4)	Bryant University- Physical Plant	1150 Douglas Turnpike	Smithfield	RI	2917	2	9/2/2013 8:09	370	445	269	82
(5)	Bryant University- Unistructure Building	201 John Mowry Rd	Smithfield	RI	2830	2	9/9/2013 21:32	84	92	165	188
(6)	Burlingame State Park	1 Burlingame State Park Rd	Charlestown	RI	2813	2	7/19/2013 6:12	5	41	28	24
(7)	Chilis East Providence	50 Highland Ave	East Providence	RI	2914	2	7/22/2013 8:52	186	188	180	221
(8)	Chilis, Lincoln RI	622 George Washington Hwy	Lincoln	RI	2865	2	8/9/2013 10:53	159	225	282	278
(9)	Chilis, Warwick	1276 Bald Hill Rd	Warwick	RI	2886	2	7/19/2013 11:02	84	260	442	142
(10)	Cilantro Mexican Grill - East Providence	430 Newport Ave	East Providence	RI	2916	2	7/30/2013 7:47	57	98	94	155
(11)	Cilantro- Warwick RI	1759 Post Rd	Warwick	RI	2888	2	9/18/2013 8:13	25	68	42	35
(12)	Colt State Park	1 Colt Dr	Bristol	RI	2809	2	9/10/2013 9:38	45	79	116	108
(13)	Dan's Place Restaurant	880 Victory Hwy	West Greenwich	RI	2817	2	8/26/2013 7:11	41	54	88	73
(14)	DOA 1 and 2	1 Capitol Hl	Providence	RI	2908	2	7/9/2013 11:23	122	147	268	169
(15)	DOA 1 and 2	1 Capitol Hl	Providence	RI	2908	2	7/9/2013 15:20	160	320	246	80
(16)	D'Vine on the Hill	145 Spruce St	Providence	RI	2903	2	9/25/2013 6:12	121	201	194	245
(17)	Fishermen's Memorial State Park	1011 Point Judith Rd	Narragansett	RI	2882	2	7/19/2013 7:18	11	15	25	48
(18)	Fort Adams	82-94 Fort Adams Dr	Newport	RI	2840	2	7/19/2013 11:42	65	90	118	93
(19)	Foundry Building- Providence RI	285 Edith St	Providence	RI	2908	2	9/18/2013 6:57	503	618	757	1,176
(20)	Garden City #1	76-98 Midway Rd	Cranston	RI	2920	2	10/23/2013 13:22	240	394	534	677
(21)	Garden City#2	76-98 Midway Rd	Cranston	RI	2920	2	10/23/2013 13:22	174	297	362	762
(22)	Kohls- North Kingstown, RI	110 The Shoppes at Quonset PointGate Rd	North Kingstown	RI	2852	2	9/13/2013 10:48	112	165	183	177
(23)	Kohls Warwick RI	403-425 RI-113	Warwick	RI	2886	2	8/28/2013 8:39	132	154	181	152
(24)	Kohls, Smithfield RI	371 Putnam Pike	Smithfield	RI	2917	2	8/28/2013 6:41	275	185	211	352
(25)	East Matunuck State Beach	950 Succotash Rd	South Kingstown	RI	2879	2	7/24/2013 7:21	59	90	142	142
(26)	Brown Unversity - Minden Hall GW	123 Waterman St	Providence	RI	2906	2	8/21/2013 9:52	408	844	1,346	1,846
(27)	The Miriam Hospital	175-191 Summit Ave	Providence	RI	2906	2	9/6/2013 11:24	129	281	285	367
(28)	Newport Hospital	11 Friendship St	Newport	RI	2840	2	9/16/2013 11:30	68	231	412	418
(29)	Paolino- Brown and Howard Wharf, Newport	21 Brown and Howard Wharf	Newport	RI	2840	2	9/20/2013 8:52	52	237	415	237
(30)	Providence Biltmore	51 Washington St	Providence	RI	2903	2	7/19/2013 6:17	475	418	451	360
(31)	Casimir Pulaski Memorial State Park	151 Pulaski Rd	Chepachet	RI	2814	2	9/9/2013 9:00	15	21	14	41
(32)	Brown University- Richmond Garage	222 Richmond St	Providence	RI	2903	2	8/20/2013 8:58	49	417	365	458
(33)	RI College	600 6th Street	North Providence	RI	2911	2	8/9/2013 6:40	82	117	190	299
(34)	Rhode Island Hospital- Emergency Room Garage	593 Eddy St	Providence	RI	2903	2	9/5/2013 8:32	160	100	83	98
(35)	Roger Williams University	1 Ferry Rd	Bristol	RI	2809	2	5/31/2013 11:32	270	417	456	578
(36)	Roger Williams #2	154 Anthony Rd	Portsmouth	RI	2871	2	6/26/2013 9:00	7	36	54	118
(37)	Salty Brine Beach	250 Sand Hill Cove Rd	Narragansett	RI	2882	2	7/19/2013 6:19	35	82	67	111
(38)	Scarborough State Beach	870 Ocean Rd	Narragansett	RI	2882	2	6/5/2015 13:16	74	117	121	156
(39)	Staples- Barrington RI	180 County Rd	Barrington	RI	2806	2	9/23/2013 10:21	91	325	318	434
(40)	TF Green Airport- Garage A	T.F. Green Airport Connector Rd	Warwick	RI	2886	2	8/15/2013 9:54	74	72	48	87
(41)	TF Green- Short Term Parking Lot D	T.F. Green Airport	Warwick	RI	2886	2	9/12/2013 11:34	42	56	80	325
(42)	Truth Box Architects	460 Harris Ave	Providence	RI	2909	2	8/7/2013 6:10	172	116	315	656
(43)	Union Station Garage, RI	5 Memorial Blvd	Providence	RI	2903	2	8/27/2013 7:53	184	200	125	185
(44)	University of Rhode Island	3 E Alumni Ave	Kingston	RI	2881	2	8/19/2013 10:30	372	372	624	599
(45)	Utilidata	225 Chapman St	Providence	RI	2905	2	6/13/2013 6:32	115	180	247	826
(46)	Viking Hotel	1 Bellevue Ave	Newport	RI	2840	2	10/4/2013 8:56	60	73	239	283
(47)	Warwick Mall	315 Greenwich Ave	Warwick	RI	2886	2	10/2/2013 7:45	213	351	314	333
(48)	Rhode Island Hospital-Garage C	104-160 Blackstone St	Providence	RI	2905	2	9/9/2013 12:35	189	277	294	154
(49)	Wrights Field	84 Inman Rd	Burrillville	RI	2830	2	10/16/2013 11:39	18	27	26	44
(50)	**Totals**							**6,763**	**9,817**	**12,113**	**14,882**

Station Details **Hours of Utilization: Sessions Begun in Each Hour (Hour Ending) 2014-2017**

Location Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
(a)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(ab)	(ac)	(ad)	(ae)	(af)	(ag)	(ah)	(ai)
Atlantic Beach- Westerly RI	4	2		1	1	2		1	6	30	19	39	39	25	46	47	65	47	57	57	14	4	1	3
Blackstone Valley Visitors Center	1	1	2		4			5	4	14	12	18	19	17	24	22	26	27	9	6	6	9	1	
Bradley Hospital						4	32	162	280	36	34	21	26	20	12	16	4	3		2	1			
Bryant University- Physical Plant						1	38	112	180	228	168	63	47	87	114	31	29	29	26	8	3	2		
Bryant University- Unistructure Building							1	13	59	234	102	24	18	17	14	15	14	11	7					
Burlingame State Park			1			1	1	1	7	6	14	5	3		7	5	8	8	5	7	7	9	1	2
Chilis East Providence	2		1			3	11	8	44	39	39	46	110	56	44	29	43	79	33	43	18	104	19	4
Chilis, Lincoln RI	1					2	15	5	39	19	37	78	162	90	45	74	57	95	92	60	42	16	12	3
Chilis, Warwick	1	1			1	1	14	98	142	30	51	92	84	32	34	75	81	45	42	33	47	19	3	2
Cilantro Mexican Grill - East Providence	5				1	4	15	5	10	15	12	21	33	28	19	12	17	37	70	42	23	9	20	6
Cilantro- Warwick RI	4	3			1	1	3	4	6	11	6	13	27	16	10	12	4	20	14	3	2	3	3	4
Colt State Park						2	6	12	14	15	28	33	43	33	39	36	24	21	26	14		1		1
Dan's Place Restaurant		1			1		1	11	6	15	10	8	27	25	24	18	30	18	20	10	13	14	4	
DOA 1 and 2	1						2	9	87	77	68	70	63	70	55	56	62	42	19	11	6	7	1	
DOA 1 and 2							2	20	214	65	70	93	79	71	62	53	36	22	7	10		1	1	
D'Vine on the Hill							9	40	46	50	39	45	59	38	49	81	63	71	73	41	26	22	7	2
Fishermen's Memorial State Park	1	1					1		6	4	10	2	5	4	4	9	6	7	5	8	16	2	4	4
Fort Adams								17	11	47	26	38	31	53	31	30	32	30	4	5	5	2	2	2
Foundry Building- Providence RI	8	2	2	1	15	22	189	1,183	216	217	204	122	166	151	102	120	77	78	60	50	31	17	15	6
Garden City #1	2	1		1		2	10	16	72	78	93	116	189	126	116	115	144	200	201	123	108	88	39	5
Garden City#2	1	3	1			6	3	10	56	46	110	137	172	108	110	99	131	162	130	127	70	72	30	11
Kohls- North Kingstown, RI	1			1	1		3	5	23	16	28	62	95	53	66	52	46	60	45	43	29	5	3	
Kohls Warwick RI			1	1			4	4	25	38	35	61	66	47	55	44	64	53	49	20	15	27	8	2
Kohls, Smithfield RI							2	8	31	53	78	71	125	117	96	119	87	66	68	53	28	11	8	2
East Matunuck State Beach							1	6	39	23	51	58	42	35	39	40	27	30	24	9	2	4	3	
Brown Unversity - Minden Hall GW	31	24	15	13	4	8	47	170	463	357	300	287	337	324	275	268	387	307	230	212	152	117	75	41
The Miriam Hospital	9	1			5	6	27	39	86	113	67	85	79	83	65	58	46	51	76	55	47	44	12	8
Newport Hospital	1	3				38	158	250	135	42	63	97	52	36	69	25	40	35	42	23	8	4	5	3
Paolino- Brown and Howard Wharf, Newport		2					4	8	177	38	53	55	63	151	72	53	54	67	45	34	25	14	16	10
Providence Biltmore	4	1			9	7	46	254	711	130	37	33	59	81	64	82	34	44	36	22	14	7	15	14
Casimir Pulaski Memorial State Park		1						1		3	3	11	10	11	15	15	7	7	1	3	2	1		
Brown University- Richmond Garage	5	5	4	1	1		15	104	611	203	60	41	44	46	32	20	10	20	14	15	15	18	3	2
RI College							3	62	149	119	42	30	38	42	36	53	23	21	37	19	12	2		
Rhode Island Hospital- Emergency Room Garage	1		1	3	4	14	62	30	44	32	22	17	25	26	19	18	19	25	24	33	8	7	5	2
Roger Williams University			1			3	62	170	288	206	218	145	124	143	83	63	50	60	44	28	16	11	4	2
Roger Williams #2	1						1	5	9	8	21	16	15	13	15	16	18	23	23	16	4	7	3	1
Salty Brine Beach						1	1	12	17	8	11	17	22	24	23	27	37	23	32	22	11	6	1	
Scarborough State Beach							3		9	23	28	72	52	37	42	37	60	37	29	29	4	2	4	
Staples- Barrington RI	3	3	1			1	16	59	94	102	66	77	58	74	93	74	58	79	85	126	56	30	5	8
TF Green Airport- Garage A				1	21	41	24	10	13	15	19	22	24	15	11	20	16	14	5	3	2		2	3
TF Green- Short Term Parking Lot D	3	6	5	12	6	4	8	5	47	10	18	18	47	22	23	43	40	38	14	6	11	35	46	36
Truth Box Architects	7	11	3	3	1	4	8	20	57	134	82	64	94	65	67	64	60	190	85	78	79	40	34	9
Union Station Garage, RI	2	3	3				6	21	65	125	44	43	30	25	20	23	35	64	61	52	26	21	11	14
University of Rhode Island					1	2	21	154	611	332	117	119	140	123	63	65	80	62	42	25	3	3	1	3
Utilidata					2	3	32	161	330	88	47	75	157	204	82	51	29	21	18	22	13	15	12	6
Viking Hotel	2	3	3	1		1		14	40	55	42	40	59	42	51	46	46	37	51	33	41	20	16	12
Warwick Mall	4	1		1			1	9	38	64	53	102	113	91	96	80	102	76	119	117	52	63	25	4
Rhode Island Hospital-Garage C	5	9	11	16	18	46	57	39	128	125	96	44	48	32	39	30	17	17	20	97	9		1	10
Wrights Field								1	2	3	2	2	10	17	3	3	15	18	24	9	6			
Totals	**110**	**88**	**55**	**56**	**97**	**230**	**965**	**3,353**	**5,747**	**3,741**	**2,855**	**2,848**	**3,430**	**3,046**	**2,575**	**2,444**	**2,460**	**2,597**	**2,243**	**1,864**	**1,128**	**915**	**481**	**247**