REPORT FROM

OFFICE OF PUBLIC ACCOUNTABILITY

Date: May 23, 2019

To: The Board of Water and Power Commissioners

From: Frederick H. Pickel, Ph.D., Executive Director/Ratepayer Advocate

Subject: OPA Report on the Department of Water & Power Base Rate Revenue Targets for Fiscal Year 2018-2019 and 2019-2020

On February 20, 2019, DWP provided its Interim Rate Review of power and water rates, as required in the related ordinances that established those rates in 2016. This report is OPA's review of that report and the rates, as called for in the rate ordinances. At this point in time, three of the five authorized years have audited financial results, the current year in progress is nearing its fiscal year end June 30th, and one full year remains.

I. RECOMMENDATIONS

A. OPA recommends adjustments under the Power Rates Ordinance 184133 ("Ordinance") as follows:

Pursuant to Section 4 (p. 162) of the Ordinance, the OPA recommends that the Board decrease the Base Rate Revenue Target (BRRT) for fiscal year 2018-2019 and 2019-2020 by 2%.

1. The resulting BRRT for 2018-2019 would change to $2,077.6 million. This revised BRRT value would be used for the calculation of the BRRT Adjustment and Balancing Account for January 1, 2020.

2. The resulting BRRT for 2019-2020 would change to $2,185.4 million. This revised BRRT value would be used for the calculation of the BRRT Adjustment and Balancing Account for January 1, 2021. For the

avoidance of doubt, $2,185.4 would therefore also be used for adjustments that are provided for in the Ordinance until the next base rate review adopts new base rate revenues. (In other words, to adjust base rates for inflation over 2%.)

B. OPA recommends no adjustment to the Water Rates Ordinance 184130.

C. OPA recommends that the DWP Board initiate procedural action by the City Council and Mayor to establish a full rate review for both water and power rates, including cost of service studies, beginning by December 1, 2020, and implemented no later than September 30, 2021. Comprehensive rate reviews should be conducted no less often than every four years thereafter. OPA would encourage the DWP Board to formally request this action of the City Council and Mayor.

D. OPA will issue a separate budget report, which will recommend that the Power Division not exceed certain levels of the 2016 rate budget forecast for capital expenditures in 2019-2020.

II. DISCUSSION OF OPA's RECOMMENDATION FOR FISCAL YEARS ENDING 2019 AND 2020

OPA supports the recommendations of the Water Division. These base rate revenue targets in the water ordinance will increase the base rate revenue target from $486 million (FYE 2018) to $490.3 million (FYE 2019) and to $507.9 million (FYE 2020), an increase of $22 million or 2.24% per year for the base rate revenue. (Base rates are 38% of the total water retail revenue.) Water Division is appropriately adjusting its O&M and capital budgets, and working within the letter and spirit of the authorization that concludes by June 30, 2020, the end of fiscal year 2019-2020.

The Navigant Report for DWP has identified a financial barrier to a power base rate reduction of -2% for FY 2019-2020. OPA is not persuaded that this will transpire. OPA recommends that the Board reduce the power base rate revenue target by 2% for both FY 2018-2019 and FY 2019-2020. The lower target affects accrued revenue authorized. This lower base rate revenue target will still allow the base rate revenue target to **increase** from $2,032 (FYE 2018) to $2,078 million (FYE 2019) and $2,185 million (FYE 2020), an increase of $153 million. Additions to the base rate target under OPA's recommended base rate would still be $46 million in 2018-2019 ($2,078 - $2032) and $107 million in 2019-2020 ($2,185 - $2,078), or 3.72% per year for the base rates. (Base rates are 52% of total power retail revenue.)

The scale of DWP's recommendation compared to OPA's is a difference of $42 million in 2018-2019, and a difference of $45 million in 2019-2020. With a 2% reduction, an increase of base rate revenue of $153 million over two years ($2,185 - $2,032 million) is an amount of additional base rate revenue approximately equivalent to:

1) Power's over-budget O&M expenditures for *all* of the first three years in the rate period ($152M),

2) the increase in Power net income above the amount planned in one year ($189M in 2017-2018), and

3) an amount that would fund $306 million **more** in Power capital expenditures, at 50% debt.

Because DWP's current 2018-2019 capital expenditure ("capex") estimate is $1.496 billion, DWP could in theory use its additional base rate revenue to reach a 2019-2020 capex above the $1.653 billion it forecasted in the 2016 rate budget. Alternatively, it could keep capex at the original level, and spend the entire increase on O&M, which is where the rate forecast is more misaligned.

DWP has claimed that any reduction in base rates will make rate increases higher in the future. OPA does not believe there is persuasive evidence of this conclusion, given all the facts and circumstances known to OPA. OPA finds Power Division's forecasted estimates of sales, net income, depreciation, fuel, deferred revenue, and borrowing have significant deviations, and forecasting beyond 2019-2020 could be adjusted accordingly, without making assumptions about the next rate review. The forecasted results are sensitive to these assumptions.

III. DISCUSSION OF OPA'S REVIEW OF FISCAL YEARS ENDING 2016, 2017 AND 2018

A. KEY POINTS

1. DWP's rate structure provides sufficient financial flexibility to manage staffing and contracting constraints, which are holding DWP back.

DWP has re-balanced a large amount of items that go into its revenue requirements, which form the basis of authorized rate revenue. This re-balancing was needed to achieve as much of its rate plan as it could, given the totality of the planned and unplanned factors affecting its operations. Those factors include variables the City does not control, like sales, as well as some that it does, like staffing.

The new rate structure is working within Ordinance limits. Specified and authorized base rates extend to 2019-2020, and rate structure refinements can be expected to take place concurrently with new base rate authorizations DWP needs beyond July 1, 2020. Without new authorizations, DWP has a base rate revenue target adjustment in place; however, it is there only to protect from inflation that may be in excess of 2%.

2. **OPA has measured DWP's alignment between the rate plan and its execution, and finds that DWP's exercise of the financial flexibility that it has been granted were within the limits of its ordinance through fiscal year 2017-2018.**

The measured alignment cost sub-categories, in order of size, were: 1) debt management, 2) capital expenditures, 3) labor and contracting expenditures, 4) depreciation. All of these are inter-related, as shown in this report's financial review section. Despite major variances, DWP delivered an overall variance to elements of its financial model that ranged from 0% to 3% of retail revenue requirements over the completed 3 years, depending on how constructed.

3. **While all divisions within DWP have struggled to meet the goals and objectives that were identified with funding authorized in the last rate case, only the Power Division seeks higher capital expenditures in the face of large under-spending in capital programs.**

A. **Water**: *Water has struggled to proceed with trunkline replacement due to contracting delays beyond management control, while mainline replacement has made excellent progress expanding its capacity to deliver growing targets*. Mainline targets for the current year have been reduced while several growth-related problems are addressed. Water has appropriately lowered their capex forecast for the current and next fiscal year based on recent experience, and raised its operations and maintenance (O&M) budget by $80 million above the 2016 rate plan for 2019-2020.

B. **Joint Services:** *The DWP's joint services contended with the stabilization of the customer care and billing system, continuous re-organizations, and the demands of litigation and faster hiring, rather than proceeding with many deferred software needs for the joint functions and the operating divisions*. Joint services capex and O&M expenses are included in the water and power funds.

C. **Power:** *Power has made good progress toward its goals. For deferred repair and replacement costs in the Power System Reliability Program (PSRP), it has similarly made very good progress toward almost all its distribution goals, while pressing upon or past the limits of the PSRP rate structure*. DWP has been unable to reach the targeted distribution level investments in pole replacement of 5,000, or spend

80% of PSRP capital on distribution (including substations). However, DWP made substantial progress reducing the unit cost of poles, which will stretch funding farther as it continues toward its goal. In addition, in 2018-2019, it began to expand more significant dollar amounts of PSRP into functional items that were not included in the PSRP rate request: for example, distribution automation, smart grid, and seismic work. Capped base rate functional items addressed these typical utility costs in meters, telecommunications, IT, and earthquake mitigation. Transmission work also appears to have relocated to PSRP from other functional items (e.g., RPS). Ratepayers paid early to accelerate PSRP capital by $100M in 2018-2019 before it could be used, and DWP has plenty of financing flexibility it can apply if it is needed. DWP is unlikely to need more capacity in authorized program elements before the next rate review.

4. DWP's Improvements Depend Upon Regular Rate Reviews

In OPA's opinion, an important consideration for DWP in seeking to retain all of its base rate authority at this time is to continue to manage the high and growing variance between its 2016 rate budgets and its current cost structure, against a very large backdrop of uncertainties and external factors beyond its control. *The absence of a month and year when it can plan to start and finish its next rate review is the single largest uncertainty it faces*. It is larger than the uncertainty of major capital planning because it impacts decisions and trade-offs immediately and continuously.

In OPA's opinion, this uncertainty interferes with the utility's ability to bring rates, revenues, and costs into closer alignment, so it can always be sure that public information about these matters is well matched up and "in sync." In the third year of the approved rates (2017-2018), DWP's Power annual budget re-programmed 76% of its rate budget capital and O&M dollars, while Water reprogrammed 103% of its capital and 30% of its O&M dollars. Delivering what the public was told to expect, when there is a growing amount of detail and transparency, is challenging under these circumstances. Longer forecasts of 4 or 5 years can reasonably be expected to bring about even larger changes.

OPA and DWP have worked together on a cost benchmarking study that should further guide the Board in identifying particular investments that will help this organization become more agile, and confident in making staffing requests that go with its goals. Since June of 2015, DWP has added 11.8% staff or 1,093 net new jobs, while experiencing turnover of 30% per year from hiring. Some two-thirds of DWP turnover is internal hiring. DWP advocated for its rate authorization by offering analysis that 21,632 private sector jobs would be supported by water and power capital expenditures of $5.7 billion. However, DWP does not count full-time, year round private sector jobs it

creates in the way economic development expenditures generally do. The reality going forward, in the current job market and leading up to the 2028 Olympics, may be very different from the planning environment of 2014. DWP will need to adapt with capital plans that have fewer assumptions about hiring and contracting.

B. BILL IMPACTS

DWP's and OPA's recommendations are only one-tenth of 1% apart in total system average rate impact over the five year period. This small difference strongly indicates that the rate structure and forecasts performed well in the first three years, and may serve sufficiently over the last two years. Excessive unrecovered costs, which can result from capping certain rate components, were contained even though rate caps were removed.

OPA provides for 2016-2017 two tables for power bills and two tables for water bills, by zone and, for water, a variety of parcel sizes, in Appendix B. This will allow more people to understand the full range of bills that take place at a uniformly shared rate impact level (e.g., approximately 5% for power, 7% for water).

Change in *median* bills, by zone and type of customer, is a basic measure of how customers respond to rate implementation over time. OPA reviewed median bills and use (kWh or hcf) for each quartile of water and power residential customers, both with and without low income or lifeline discounts. While it comes to different conclusions than DWP does about the lowest quartile (i.e., smallest bills), this is because OPA chose to use a different data set, and one more oriented to the completed years than future ones. OPA found that the residential rate changes, as measured by shifts in median use and dollars, are expressing themselves in a predictable way. No significantly unusual or unexpected effects were observed.

OPA and DWP now have a repeatable method for developing customer quartiles in place for examining this issue between and at rate reviews, and can work on adjusting that method through consultations.

A full review of the costs of service would be needed to examine inter-class (e.g., residential vs. commercial) performance of the rate structure. DWP is planning to begin that cost of service study in the summer of 2019, after this interim rate review is complete.

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C. TRANSPARENCY

The following topics on the transparency of key DWP third-party costs were covered in OPA's 2016 rate report, and are updated here.

1. DWP's inter-City payments for services

- $66.6M (up 10.5% or $6M) in FY 2015-2016
- $82.4M (up 24% or $16M) in FY 2016-2017
- $77.2M (down 6% or $5M) in FY 2018-2019

The simple average rate of change, 9%, is only mildly faster than the pace of rate changes (5-7%). OPA will continue to monitor this topic for any fundamental misalignment or instability, relative to planned revenue requirements. While some categories of costs have changed markedly, offsetting changes in the opposite direction have also occurred.

DWP has significant development expenditures that precede the start of capital work, including permitting and fees in the City and elsewhere. During development, spending can vary from what a straight-line allocation of costs over time might otherwise suggest. At some point in the longer term development of the benchmarking effort, OPA may suggest that these cost elements be reviewed in a manner appropriate to their scale and impact on rates.

2. DWP's community engagement costs

- $23.6M in FY 2015-2016
- $7.1M in FY 2016-2017
- $0.9M in FY 2017-2018

The details of these costs are in Appendix D, if all the types of costs therein were able to be tracked in time for this report. While DWP is apparently spending much less than most utilities of its size in these categories, it should be recognized that cost structures in this area are not controlled in the same way as those costs solely under DWP's operational control. Work with partners, alliances, research institutions, and non-profits can be more highly varying based on these entities' independent activities.

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IV. REVIEW OF DWP'S FINANCIAL MODELING FOR FISCAL YEARS ENDING 2016, 2017 AND 2018

In order to evaluate whether DWP has experienced a "material misalignment" of its cost and rates, which is called for by the Ordinance, OPA undertook to measure how certain DWP modeled costs and revenues have fared, with three completed years now available to review. While some misalignments may seem large in absolute terms to an individual ratepayer, that does not mean they are material: one needs to evaluate the relative size of forecast deviations. The detailed summary of this effort is provided in Appendix A.

It is worth noting that, during the 2016 review, OPA's concern about forecasts beyond three years was resolved when DWP provided for this interim rate review. OPA was the first to suggest this check, and the term "material misalignment," to help identify any new issues and provide timely scheduling and guidance for new rates.

All of the results in this section are measured using DWP's financial model. This model is a useful tool. DWP uses it to guide its financial management and Board deliberations; however, like all models, judgment and discretion are needed to run the model or interpret the results.

The discussion in this Section IV covers fiscal years ending 2016, 2017 and 2018 (unless otherwise stated) compared to the 2016 rate forecast. These OPA measures are primarily "on the margin", and important differences to audited financial statements are to be expected.

Revenue: DWP has managed over the last three years to maintain its financial stability, despite under-collecting $844 million of authorized revenue. This is 6% below forecasts. DWP's stable finances are a testament to the thoroughness with which the current revenue and sales estimates are adjusted: this "de-coupling" mechanism ensures DWP a set amount of revenue when sales are lower than planned.

DWP planned to collect $14.7 billion in retail revenue in the first three years of the rate period, which is 54% of the $25.5 billion in revenue planned over the five year period.

> **Sales volumes**: Whether the sales forecasts are overly optimistic, or the conservation effects are larger than expected, the decoupling method DWP uses covers all expected revenue from both of these effects. The distinction between these two types of effects on revenue is not generally considered feasible within narrow ranges. Sales forecasts that are too optimistic are forecasts that are higher than established and recent trends, and present challenges to financing capital

plans. Weather is typically the largest impact on these forecasts, and sudden changes in the economy are also difficult to predict, and can be large.

Optimistic sales forecasts tend to create the appearance of small rate impacts that will end up being higher. DWP's power sales forecast in the 2016 rate review was more than 1,000 GWH (4.3%) higher than it now expects for 2019-2020. DWP's annual budget forecasts, which are different from the 5 year rate budget forecasts, tend to be more accurate, as is possible with smaller time horizons. Given the size of this change in power sales, OPA offers some guidance in Appendix A prior to the next rate review.

Water forecasts are also affected with forecast variation, but OPA finds no systematic issues with DWP's water sales forecasts. Conservation coinciding with California's drought has edged down only modestly, as many water saving investments have continued to deliver more efficient water use.

Capital expenditures: Despite Water division staffing levels that are half the size of the power division's, the water and power divisions were unable to expend the same amount of capital over the three years completed. Power under-spent relative to its 2016 rate forecast $864 million, and water under-spent by $865 million. Examining only the cash flow of variances, with adjustments for O&M, depreciation, and debt service discussed below, yields a variance to plans of 3%, which is very small.

The root cause is evenly divided between staffing and contracting, insofar as it can be measured readily. Power reduced contracting out for capital expenditures by $516 million, and water reduced contracting out for capital expenditures by $256 million, in their annual budgets over the three years. The combined power and water capital expenditure reduction in contracting for the last year authorized (FY 2019-2020) is $1.013 billion. The first three years' reductions in capital expenditures contracting were only 45% of the unspent capital, which suggests a relatively even balance of staffing shortfall and contracting out. (Actual reductions in contracting are not tracked easily.) *Both divisions are stretched by the demands of new business, infrastructure replacement that is pro-active, and responding to service outages.*

O&M expenditures: Water's over-expended O&M was $20 million, which is consistent with its management of over-time. Power division, likely due to a combination of factors that more clearly indicates under-staffing, had $152 million in above-forecast expenditures.

Labor: DWP's planned use of capitalized labor was above forecast by $360 million, and above its planned use of O&M labor by $37 million. The combined effect is 7% above the planned labor allocations to both capital and O&M. In context, with the addition of over 1,000 employees (over 11%), this is relatively close to the 2016 rate budget plan. It

demonstrates a demographic shift taking place with retirements of more senior and seasoned staff.

Net income: DWP increased its financial strength by growing fund net assets $498 million more than planned. While this is 80% more than forecasted, DWP's marginal fund net income remains low. DWP added 9% fund net income relative to the capital it spent, 10% for power and 6% for water. For DWP to continue to grow and deliver on its capital plan it will need to continue to increase marginal fund net income, most likely by at least by these percentages. (OPA used the non-securitized model estimates for water to make these calculations because using the securitized model estimates introduces variation only $23 million lower, for a plan that was not viewed by OPA as realistic at the time.)

Debt reduction: While not an explicit goal of the rate authorization, DWP managed the total debt and forecasted bond issuance in a manner that retains its financing flexibility. Power reduced its planned bond issuance by $580 million, and Water reduced its planned bond issuance by $706 million. The debt service savings for Power were $54 million and for water were $163 million. Measuring only forecast variation and in opposite directions, this variance from the 2016 model forecast was the second largest after net income, at 16%. In addition, power lowered long term debt by $760 million more than planned, or $180 million more than the amount of reduced bond issuance.

Water's model of issued debt was 70% of the capital spent, and power's model of issued debt was 43% of the capital spent. These are marginal debt and capital measures done for rate-making purposes, and are not intended to replicate any representations DWP may have in the past or may in the future make in connection with its debt.

Overall Balancing: DWP was able to balance its finances with remarkable accuracy. Combining both power and water results over three years, OPA finds that DWP experienced O&M spending that was $172 million more than forecast. It had lower depreciation expense by $354 million. It had debt service reductions of $223 million. It included in rates $439 million of cash expenditure funding for capital expenditures that were deferred or cancelled. The net effect of these four items exactly counter-balances the revenue requirement under-collection of $844 million.

OPA has created some non-accounting measures by which to evaluate the degree to which the current rate structure is working. These measures count some items twice, in order to evaluate the full effect of all adjustments taking place. The maximum OPA estimate of unlevered cost and debt re-balancing that DWP needed to do to manage its staff and contracting resources was $3. 016 billion, or 20% of the total retail revenue requirement in those years. Power made up $1.490 billion of this figure, and water made up $1.526 billion. To remove the debt issuance effect and measure only the cash

portion of capital expenditures, the re-balancing was $877 million for power and $849 million for water. The proximity of these figures to each other is a testament to a high level of internal competition for resources, given the different sizes of the two operating divisions and funds.

V. ADVICE CONCERNING TRANSITIONS TO FISCAL YEARS STARTING JULY 1, 2020 AND LATER

1. Water and Power Capital In General

Growing the DWP's capacity to construct and operate, in an economically efficient way that is sensitive to rate impacts, is going to call for:

- improvements in the pace of projects (e.g., trunklines, budget systems),
- reductions to internal competition for certain human resources between water (mainlines) and power (new business), and
- refinement of how trade-offs between inside and outside jobs are conducted.

Less than one month after the rates were approved in 2016, DWP informed OPA that it did not have time to pursue "infeasible" contracting that the 2016 rate budgets proposed, as years of labor mediation and potential labor litigation could delay getting projects underway. However, many of the funded and authorized projects are not moving forward today, or are only just getting started.

DWP has made good progress in expanding water and power replacement levels, and reaching even higher goals is planned. However, in OPA's opinion, an organization this large can be expected to suffer slower work completion with large annual re-positioning of funds. A significant amount of re-positioning involves moving employees within the organization. Offsetting this concern is the fact that these adjustments may take place in more manageable increments from one year to the next. Nevertheless, OPA would encourage the Board to consider this aspect of DWP's current situation, as it plans for a more stable future and coordinates with the City Council and Mayor through the next rate review. Higher capital numbers in both water and power, without addressing the obstacles raised here, are going to pose the proverbial dilemma that one "can't get there from here."

If DWP determines that it needs to acquire real property to meet personnel and capital goals, and those acquisitions require additional base rate capital, the next rate review can include those plans. OPA is concerned that any attempt to use the flexibility in the

existing rate structure to accomplish a major acquisition might paradoxically slow DWP down even more. This concern is based on the potential for a loss of financial flexibility that was exceedingly slow and difficult to arrive at in the first instance, and could last for a long time, given DWP's history.

2. PSRP Core Distribution Growth Rates

Growing into the $1.653 billion of power capital currently authorized will probably take more time. DWP proposes no increases in personnel for 2019-2020, and has met with limitations in contracting PSRP work due to nationwide shortages in specialized trades. The PSRP capital is a sub-component of the total authorization, and it was designed to have a great deal of flexibility.

DWP has sought funding to catch up on deferred capital work in the 1990's several times since 2000. Pole replacement is driven by the age of poles. Aging is not suspended for recessions, or if regulatory uncertainty chills investment. Generally, deferred work in this area can be a silent feature for about 8 years before reliability degradation can manifest. Capturing the important indicators is more difficult in a system where outages are manually counted. Nevertheless, DWP responded by 2008, when it proposed the Power Reliability Program, which evolved into the PSRP. The funding sought before the Great Recession would have funded 5,000 poles a year by 2011-2012.

By the time the 2016 rate budgets and review were prepared in 2013-2014, many aspects of the 2008 proposal had been halted by the largest recession in a generation. Dramatic financial pressures altered what DWP could do. DWP's July 2015 power proposal was sufficient to replace 6,000 poles by 2018-2019, a steady-state it would need to maintain to 2040 in order to manage aging of the power system expansion after World War II.

Given the 2008-2012 history, OPA and DWP worked in 2014 on trying to find a balance between flexibility in the PSRP funding and keeping the pole replacement efforts on a long-term track that would not be reversed or delayed *again*. This narrower focus was intended by OPA to counter-balance the tendency found in many large utilities: the work furthest from the headquarters is often the last to get the staffing and resources.

OPA therefore tracks six "core" distribution categories to monitor progress at what DWP has indicated is the most challenging and granular level of the PSRP program. OPA does recognize that the entire program is important, and cost optimization is something DWP will keep improving. However, these core costs have captured two-thirds of the under-spending in core PRSP distribution in the first three years, and established the pace of change the DWP is achieving.

These distribution categories that OPA monitors twice a year, at the end of the first and third fiscal quarters, includes poles, cables, transformers, cross arms, cable replacement, and substructures. These core PSRP capex items were $199 million in 2017-2018. In that year the total PSRP capital expenditures were $53 million *below* the 2016 rate budget. In 2015-2016, which was almost over before the rates were approved, DWP replaced 1,722 PSRP poles. (There are additional poles replaced or added, but funding comes from other revenue sources.) Therefore, DWP *is* making progress, although it struggles to ramp up its delivery. In the current year, 2018-2019, DWP estimates these six core distribution will reach $171 million (3,500 poles), which constitutes a potential dip in funding but not delivery, if efficiencies continue to be gained. In the next year, 2019-2020, DWP is proposing $237 million for these same items, which includes a target of 4,000 PSRP poles.

By OPA's estimate, a sudden fiscal increase like this in 2019-2020 could be too large a stretch goal. Even if one assumes the best growth rates attained, DWP would have room to grow through the end of fiscal year 2021. DWP may need time to solidify the gains planned for 2019-2020, before reaching the pole targets it identified at the time of the 2016 rate authorization.

The next rate review gives DWP the opportunity to re-mix its funding and priorities, reflecting current realities, as it drives down the cost per pole. Substantial progress in unit costs, from $35,000 to $26,800 per pole, has been achieved so far. OPA has long supported the need for a new and second apprentice training facility in the southern half of DWP's service territory, but knows of no specific DWP solutions intended to remedy the staffing or contracting limitations DWP faces in 2019-2020.

Hopefully, practice improvements and investments proposed by DWP in the next review will keep expanding delivery of these items, while addressing the traffic and training challenges that slow DWP down.

APPENDICES TO REPORT

A. **Financial Model Review for Fiscal Years Ending 2016, 2017, 2018 and Forecasts 2019, 2020**

B. **Sample Power and Water Bills, FY2016-17**

C. **Matters to be Included in the Next DWP Rate Review**

D. **DWP's Community Engagement Costs**

E. **OPA Presentation on Interim Rate Review**

APPENDIX A

Financial Model Review

Fiscal Years Ending 2016, 2017, 2018

Forecasts 2019, 2020

OPA has summarized here some of the key estimates that support DWP's rates. As noted in the main body of this report, these estimates are not exact matches to audited financial reporting. In all topic areas, the box on the raised, single cell is the sum of the cumulative power and water numbers with the highlighted cells in the FY 17-18 column.

1. **Retail Revenue**

DWP collected $844 million less revenue than was authorized in the 2016 rate review. The composition is as shown below. These shortfalls in forecasted revenue were originated by sales growth that was too optimistic, plus conservation that resulted from the price signals and rate tier differentials implemented after the rate review.

Retail Revenue							844
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**3519**	**3730**	**3946**	4048	4225
		ACTUAL	**3444**	**3417**	**3661**		
		under-collected	75	313	285		
		cumulative	75	388	**673**		
WATER		RATES	**1091**	**1227**	**1206**	1236	1311
		ACTUAL	**964**	**1083**	**1306**		
		under-collected	127	144	-100		
		cumulative	127	271	**171**		

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2. Operations and Maintenance (O&M) Costs

DWP spent above its power O&M forecasts by $172 million due to a variety of factors, including labor estimates that were too low, backlogged trouble tickets, an unusually broad set of power outages in the summer of 2018, and operational service standards adopted through litigation over the billing system. The water O&M forecasts were closer to actual due to smaller impacts from water interruptions, overtime, deferred maintenance, and litigation-related service standards.

Operation & Maintenance Expenditures							172
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**1039**	**1030**	**1051**	1082	1127
		ACTUAL	**1081**	**1093**	**1098**		
		over-spent	42	63	47		
		% over-spent	4%	6%	4%		
Cumulative rate budget			1039	2069	3120		
Cumulative over-spent			42	105	**152**		
		% over-spent			5%		
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
WATER		RATES	**459**	**473**	**485**	492	502
		ACTUAL	**460**	**492**	**486**		
		over-spent	1	18	1		
		% over-spent	0%	4%	0%		
Cumulative rate budget			459	932	1417		
Cumulative over-spent			1	19	**20**		
		% over-spent			1%		

3. Capital Expenditures (capex)

DWP's power and water capital expenditure forecasts were too high, by approximately the same amount, $864 million and $865 million, respectively. It is worth remarking upon that power forecasts were at least 60% larger than water forecasts. Both divisions rely on the same joint services to support capital projects. However, water division has a more systematic method for hiring and managing water projects. The water division has lowered its forecast for capital in FY 2019-2020, and the power division has raised its forecast for that year.

The cumulative cash included in the retail revenue requirement for this deferred or cancelled work was $251 million for power and $188 million for water.

Capital Expenditures							1729
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**1486**	**1465**	**1540**	1593	1653
		ACTUAL	**1173**	**1130**	**1324**		
		under-spent	313	335	216		
		% under-spent	21%	23%	14%		
Cumulative rate budget			1486	2951	4491		
Cumulative under-spent			313	648	**864**		
		% under-spent			19%		
		cash match			**251**		
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
WATER		RATES	**983**	**1052**	**949**	1121	1356
		ACTUAL	**668**	**746**	**706**		
		under-spent	315	307	243		
		% under-spent	32%	29%	26%		
Cumulative rate budget			983	2035	2984		
Cumulative under-spent			315	621	**865**		
		% under-spent			29%		
		cash match			**188**		

4. Debt Issuance and Debt Service

Debt issued was $1.286 billion less than forecasted. DWP reduces borrowing to reflect capital spending. This lowers total debt and the carrying costs of that debt ("debt service"). DWP's reduced capex budget and reduced borrowing produced $223 million of debt service savings, relative to the rate forecasts. For scale, debt reduction ($752M) was 58% as big as issuance reductions ($1.286B).

Debt Issued							1286
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES (line 13a)	**428**	**836**	**874**	887	931
		ACTUAL	**525**	**588**	**445**		
		under-issued	-97	248	429		
		cumulative	-97	151	**580**		
WATER		RATES	**749**	**763**	**680**	904	1097
		ACTUAL	**756**	**407**	**323**		
		state loans	73	72	50		
		under-issued	-7	356	357		
		cumulative	-7	349	**706**		

Debt Service							223
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**473**	**499**	**580**	644	717
		ACTUAL	**467**	**479**	**546**		
		under-spent	6	20	34		
		cumulative	6	26	**60**		
WATER		RATES	**263**	**330**	**377**	422	491
		ACTUAL	**235**	**272**	**300**		
		under-spent	28	58	77		
		cumulative	28	86	**163**		

Total Non-current Debt for Capitalization Ratio In Model							752
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES long-term debt	**9056**	**9744**	**10434**	**11120**	**11822**
A		Three year change			**1378**		
		ACTUAL	**9155**	**9519**	**9772**		
B		Three year change			**618**		
		annual difference	-99	225	662		
A-B		three year difference			**760**		
WATER		RATES long-term debt	**5228**	**5487**	**5757**	**6234**	**6832**
A		Three year change			**529**		
		ACTUAL	**5249**	**5569**	**5786**		
B		Three year change			**537**		
		annual difference	-21	-83	-29		
A-B		three year difference			**-8**		

5. Depreciation

DWP's depreciation was lower than forecasted by $354 million, in part due to reduced capex and in part due to high forecasts of existing plant.

Depreciation							354
			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
POWER		RATES	596	646	679	711	771
		ACTUAL	540	521	554		
		forecast error	56	125	125		
		cumulative	56	181	306		
WATER		RATES	157	169	189	209	233
		ACTUAL	144	157	165	176	187
		forecast error	13	12	23		
		cumulative	13	25	48		

6. Fund Net Assets

DWP was able to grow fund net assets by $498 million, and this is an essential part of adding additional planned capital to the power and water systems. In OPA's opinion, DWP remains at the extreme low end of reasonable additions to net income, given the total scale of its operations and capital plans. (These water rate forecasts are from the non-securitized version of fund net assets in the 2016 rate budgets. The securitized water outcome, had it occurred, might have led to a result of $475 million.)

Increase In Fund Net Assets							498
			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
POWER		RATES	77	85	89	89	89
		ACTUAL	175	177	278		
		forecast error	98	92	189		
		cumulative	98	190	379		
WATER		RATES	109	125	140	138	161
		ACTUAL	154	141	198		
		forecast error	45	16	58		
		cumulative	45	61	119		

7. Labor Costs: Inside & Outside DWP

DWP did a good job of containing cost over-runs in O&M due to labor. Water was below its forecast by $41 million. Power was modestly over its forecast in 2016-2017, and had more adverse challenges (mentioned above) in 2017-2018.

DWP's capital labor over-runs are a direct result of under-forecasted labor costs. Note that, in FY 2017-2018, the power capital labor forecasted to be spent was 215% larger than water's capital labor forecast, and both water and power over-runs were almost equal. These over-runs demonstrate that the capital plans DWP has going forward will demand significantly more labor to support them. This observation is supported by the reduction in annual budgeting of contracts that were forecasted in the rate review to leverage DWP's staffing levels. Those costs represent additional labor (and, to a degree, materials) that would have been needed to reach DWP's capital goals.

Capitalized Labor							360
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**499**	**510**	**485**	489	515
		ACTUAL	**499**	**553**	**623**		
		over-spent	0	43	138		
		cumulative	0	43	**181**		
WATER		RATES	**231**	**225**	**225**	346	338
		ACTUAL	**263**	**289**	**309**		
		over-spent	32	64	84		
		cumulative	32	95	**179**		
Operations & Maintenance Labor							37
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		RATES	**749**	**761**	**785**	806	831
		ACTUAL	**738**	**809**	**825**		
		over-spent	-11	48	41		
		cumulative	-11	37	**78**		
WATER		RATES	309	316	335	346	338
		ACTUAL	288	309	322		
		under-spent	21	7	13		
		cumulative	21	28	**41**		
Contracts Capital Expenditures (Budgeted Reductions) (MRR-20)							772
			FY15-16	**FY16-17**	**FY17-18**	**FY18-19**	**FY19-20**
POWER		Capex reduction	0	185	331	337	278
		cumulative	0	185	516	853	1131
WATER		Capex reduction	0	64	192	412	735
		cumulative	0	64	256	668	1403
updated: MRR-20 4.5.19 with FY19-20 final budget.xlsx							

8. Total Compensation Trends and Implications For 2020-2021

On the following two pages are total compensation costs and related growth rates for employees. Two different data series are used by OPA in different ways, covering total labor related costs and total employee related costs. Daily exempt and part time construction workers are included in "total labor costs." However, when utilities compare themselves to other utilities, it is common to look only at the employee costs in "total compensation."[1] OPA evaluates both types of costs and (as above) contracting costs.

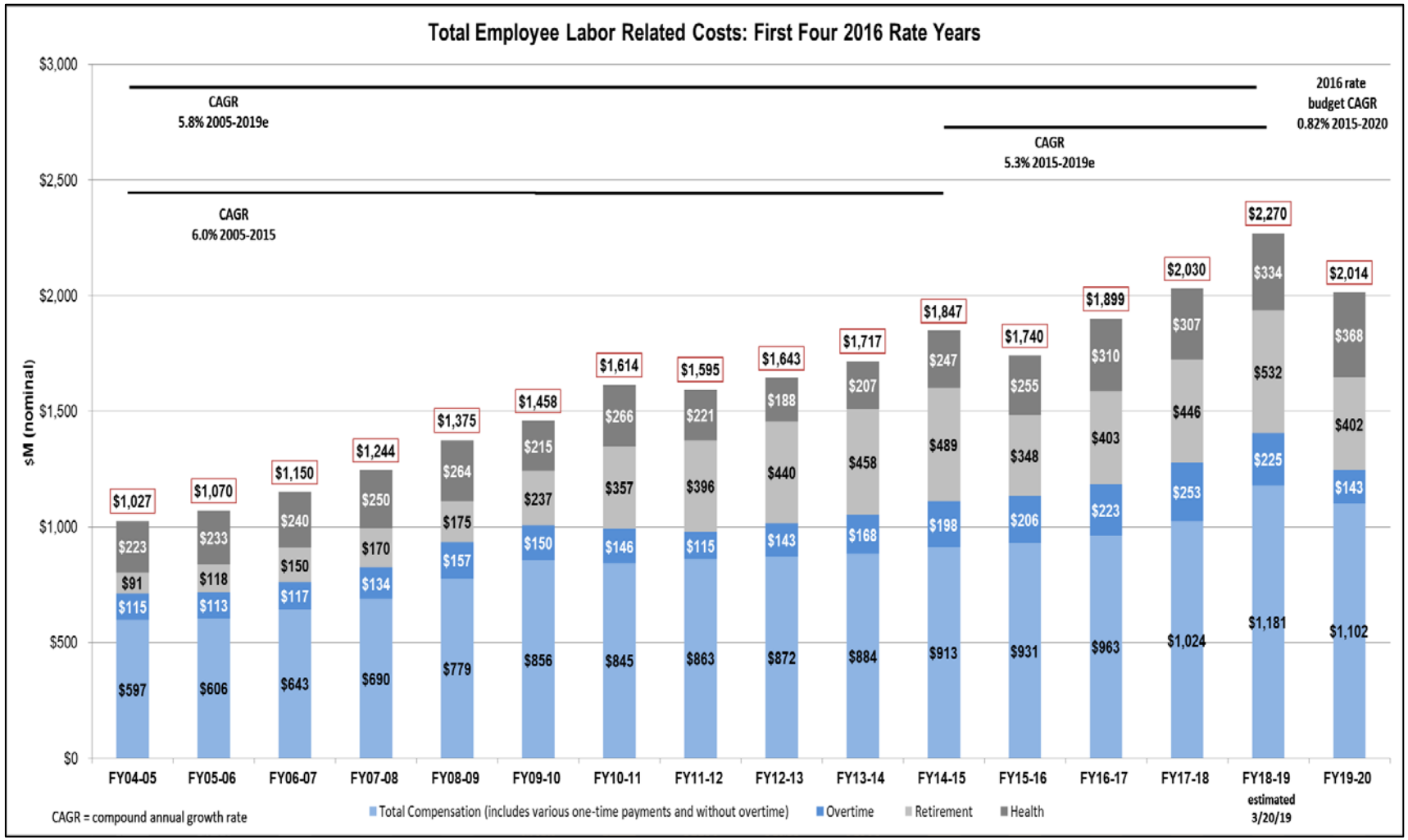
Both of the employee labor related charts below include actual labor costs through fiscal year end 2018, and estimated labor costs through fiscal year end 2019 (as of 3/20/19). The first chart shows the targeted end-point of the five year forecast from the 2016 rate budgets ("First Four 2016 Rate Years"). The second chart shows the final 2019-2020 budget request of DWP, completed April 22, 2019 ("All Five 2016 Rate Years").

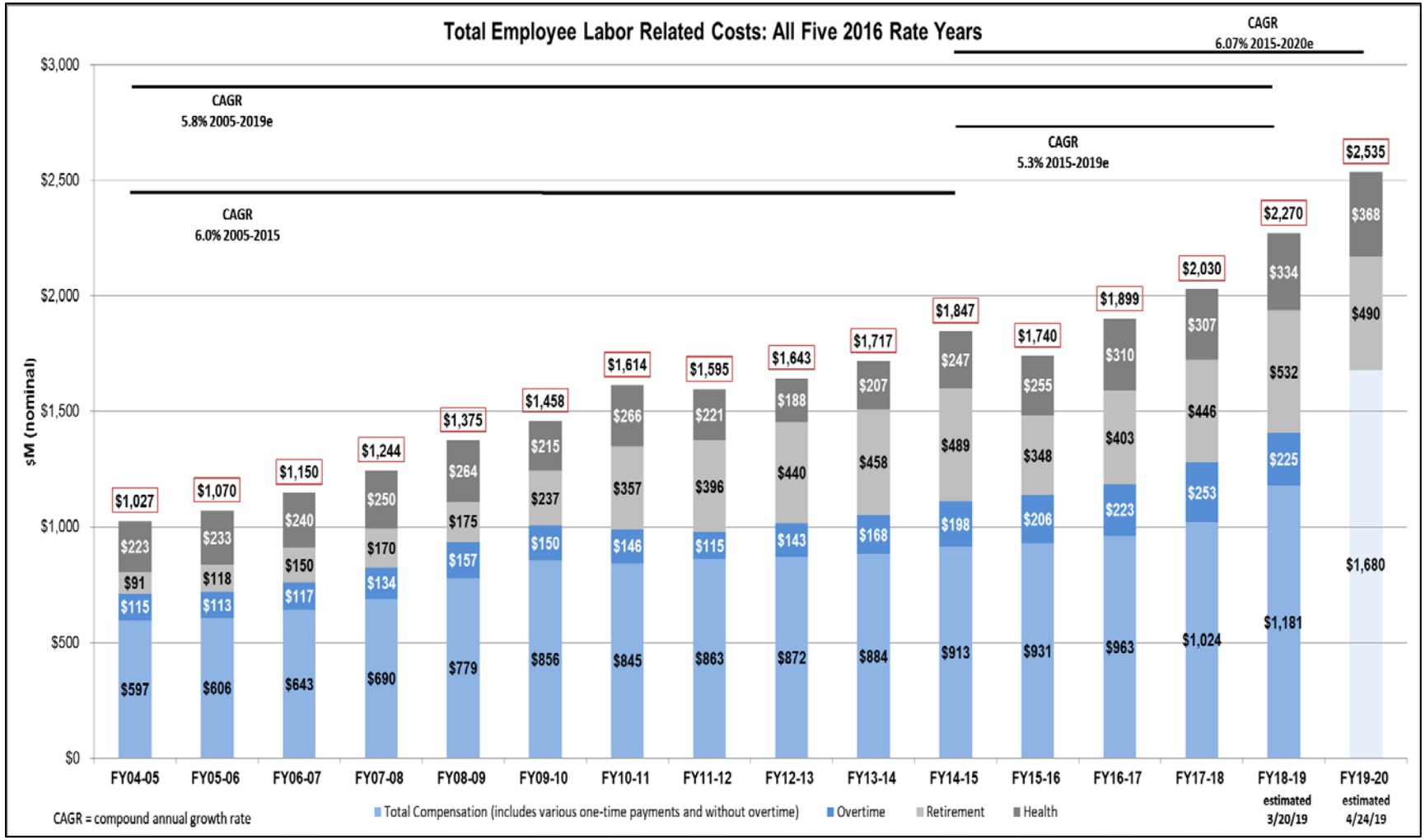
In planning for five years, DWP hoped to out-source a great deal of work, while keeping its growth in total compensation at only 0.82% per year. Given a variety of factors, this forecast was too low, as was the planned contractual support.

Trend growth for total compensation during the five year period has increased slowly, rising to 5.3% in the first four years, and 6.07% is now anticipated for the full five years of the rate authorization. This is over 10% growth per year in the last two years of the five year period, under-scoring the difficulties of having infrequent rate reviews. The challenge DWP faces is to better mobilize at reasonable cost, while integrating and leveraging its internal resources and expertise. Employees have a critical and distinguishable relationship to a utility's business, compared to vendors. OPA observes that getting supervision to fit the mix of inside and outside labor is becoming more difficult for DWP, and the size of this challenge is commensurate with the very large size of its capital plans. The mix of projects in these plans is highly varied, and, accordingly, the mix of resources DWP needs for an individual project varies highly as well.

As OPA has previously observed, DWP processes for staff and contracts move too slowly to design, develop and construct the high increases in capital plans DWP had hoped to achieve.

[1] DWP is working on IT implementation that will help OPA identify these costs more efficiently in the future. OPA has rough estimates of the cost of daily exempt and part time construction workers in recent years between $59 million to $73 million, for fiscal years ending 2015, 2016, 2017.


Total Employee Labor Related Costs: First Four 2016 Rate Years
$M (nominal)
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
CAGR
5.8% 2005-2019e
CAGR
6.0% 2005-2015
CAGR
5.3% 2015-2019e
2016 rate
budget CAGR
0.82% 2015-2020
FY04-05 $1,027 $223 $91 $115 $597
FY05-06 $1,070 $233 $118 $113 $606
FY06-07 $1,150 $240 $150 $117 $643
FY07-08 $1,244 $250 $170 $134 $690
FY08-09 $1,375 $264 $175 $157 $779
FY09-10 $1,458 $215 $237 $150 $856
FY10-11 $1,614 $266 $357 $146 $845
FY11-12 $1,595 $221 $396 $115 $863
FY12-13 $1,643 $188 $440 $143 $872
FY13-14 $1,717 $207 $458 $168 $884
FY14-15 $1,847 $247 $489 $198 $913
FY15-16 $1,740 $255 $348 $206 $931
FY16-17 $1,899 $310 $403 $223 $963
FY17-18 $2,030 $307 $446 $253 $1,024
FY18-19 estimated 3/20/19 $2,270 $334 $532 $225 $1,181
FY19-20 $2,014 $368 $402 $143 $1,102
CAGR = compound annual growth rate
Total Compensation (includes various one-time payments and without overtime)
Overtime
Retirement
Health


Total Employee Labor Related Costs: All Five 2016 Rate Years
CAGR 6.07% 2015-2020e
CAGR 5.8% 2005-2019e
CAGR 5.3% 2015-2019e
CAGR 6.0% 2005-2015
$M (nominal)
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
FY04-05 $1,027 $223 $91 $115 $597
FY05-06 $1,070 $233 $118 $113 $606
FY06-07 $1,150 $240 $150 $117 $643
FY07-08 $1,244 $250 $170 $134 $690
FY08-09 $1,375 $264 $175 $157 $779
FY09-10 $1,458 $215 $237 $150 $856
FY10-11 $1,614 $266 $357 $146 $845
FY11-12 $1,595 $221 $396 $115 $863
FY12-13 $1,643 $188 $440 $143 $872
FY13-14 $1,717 $207 $458 $168 $884
FY14-15 $1,847 $247 $489 $198 $913
FY15-16 $1,740 $255 $348 $206 $931
FY16-17 $1,899 $310 $403 $223 $963
FY17-18 $2,030 $307 $446 $253 $1,024
FY18-19 estimated 3/20/19 $2,270 $334 $532 $225 $1,181
FY19-20 estimated 4/24/19 $2,535 $368 $490 $1,680
CAGR = compound annual growth rate
Total Compensation (includes various one-time payments and without overtime)
Overtime
Retirement
Health

9. Forecasting Capex Going Forward

Adjusting the under-spending in the capital plan by additional capitalized labor used, it is readily observable that more labor will be needed to grow DWP's capital delivery capabilities by $1,369 million. Note that the size of the growth for both divisions is approximately equal. Because power rates are increasing at 5% per year, and water at 7% per year, OPA chose 6% to illustrate the cost of deferring $1.369 billion in capital by one additional year: $82 million. DWP will need more resources to deliver its capital projects.

Capex under-spent - Capitalized Labor over-spent			
NET POWER	EXPENDED UNDER PLAN		683
NET WATER	EXPENDED UNDER PLAN		686
NET POWER & WATER			**1369**
		% planned	18%
Cost of deferring work one more year @ 6%			82

10. Rate and Budget Flexibility

Summing up all the imbalances discussed above in this appendix, and offsetting forecast variance in the opposite direction from what was planned, OPA estimates that DWP is able to manage from 12% to 20% of the revenue requirement changes that developed since the rates were adopted in 2016. OPA is of the opinion that the financial management of these wide variances is well executed. The water division is continuing to improve its ability to control and deliver on its forecasts, and operates within both the spirit and letter of the current adopted rate structure. The power division has other challenges that appear to take priority, but OPA's constant refrain about under-staffing of the PSRP has only recently generated a small increase in the power apprentice training program.

The entire planned retail revenue adopted in 2016 was $25.5 billion, and the first three years covered 54% of that plan. DWP can be expected to continue to manage these variances through 2019-2020, and perhaps even from 2020-2021. Additional unforeseen contingencies could further pressure rates upward. Failing to start and end a rate review in a regular or predictable manner can also increase that pressure on re-balancing revenue requirements.

POWER	**unlevered**				
877	1490				
WATER					
849	1526				
POWER & WATER					
1726	3016	total re-balancing accomplished			
12%	20%	percent of revenue requirement			

11. Power Sales Forecasting for Electric Vehicles

DWP would do well to recognize that, across California, increases in conservation and solar have, thus far, fully offset any increases from electric vehicles. Predicting faster growth in sales from electric vehicles has been a source of substantial forecasting variance since the early 1990's. As rates continue to climb, DWP is likely to experience even sharper increases in conservation investments that people have deferred, because their bills were so low. Higher rates can also be expected to affect installation of solar with batteries, which may soon catch up to what other southern California areas have experienced. Counting on electric vehicle growth against these offsets to retail sales estimates could prove disappointing.

OPA observes that forecasting for EV power consumption has not improved much with time. If a utility were to count on consumption arising from a planned number of vehicle charger deployments, this is now understood to pose a potentially higher risk to all other ratepayers because the EV sales that are over-forecast will not be attributed specifically to the EV customers. Having a broad sales decoupler is not a good reason to increase cost-shifting strategies between or within customer classes.

Rebates and discounts of all types have been tried for two decades. So far, they have not added much to controlling the timing of this new use, after changes in solar and conservation are considered. Waiting for electric vehicle consumption to happen, and measuring it as it happens, is a prudent approach. Using a cost of service study to isolate the effects of sales forecasting variances for new EV schedules is another way to approach these sales forecast challenges.

APPENDIX B

FY 2016-17 Residential Power Use, Rates and Bills for Hottest/Coldest Months

Description	Fixed Power Access Charge (PAC) Tier in Metro Low Temperature Zone 1			Fixed Power Access Charge (PAC) Tier in Valley High Temperature Zone 2		
	PAC 1	**PAC 2**	**PAC 3**	**PAC 1**	**PAC 2**	**PAC 3**
Percentage of Customers	**Power Usage on Cooler Month of Year (KWh/mo., January 2017 Bills)**					
Bottom 10%	65	230	600	80	275	675
Bottom 25%	120	310	830	140	370	905
Median/Typical	**180**	**410**	**1120**	**215**	**485**	**1165**
Top 25%	250	550	1605	300	650	1525
Top 10%	330	710	2480	390	835	2105
Average	*223*	*454*	*1519*	*250*	*540*	*1397*
Percentage of Customers	**Power Usage on Warmer Month of Year (KWh/mo., July 2016 Bills)**					
Bottom 10%	55	170	455	65	215	555
Bottom 25%	100	245	675	120	310	780
Median/Typical	**155**	**335**	**945**	**185**	**420**	**1,035**
Top 25%	225	455	1,395	265	570	1,365
Top 10%	310	605	2,180	365	745	1,895
Average	202	372	1,280	228	463	1,228

Note High Season: June 1 - Sep. 30; Low Season: Oct. 1 - May 31.

No. of Customers (FY16-17)	**Metro Low Temperature Zone**			**Subtotal**	**Valley High Temperature Zone**			**Subtotal**
Bottom 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Bottom 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Medium/Typical	**120,110**	**100,102**	**22,573**	**242,784**	**211,935**	**169,318**	**29,764**	**411,016**
Top 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Top 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Total	240,220	200,203	45,145	485,568	423,869	338,635	59,528	822,032

Total Residential Power Customers: 1,307,600

FY 2016-17 Residential Hottest/Coldest Month Demands Monthly Power Use and Bills

Description	Fixed Power Access Charge (PAC) Tier in Metro Low Temperature Zone 1				Fixed Power Access Charge (PAC) Tier in Valley High Temperature Zone 2			
	PAC 1	PAC 2	PAC 3		PAC 1	PAC 2	PAC 3	
Percentage of Customers	**Bills in Cooler Month of Year (January 2017, $/mo.)**							
Bottom 10%	$11	$37	$107		$13	$44	$116	
Bottom 25%	$19	$49	$149		$22	$58	$158	
Median/Typical	**$28**	**$66**	**$203**	*Cooler Temp Zone*	**$33**	**$75**	**$206**	*Warmer Temp Zone*
Top 25%	$38	$92	$292		$45	$105	$272	
Top 10%	$50	$121	$453		$59	$139	$379	
Average (weighted by No. of Customers)	*$28*	*$70*	*$224*	*$64*	*$34*	*$80*	*$217*	*$66*
Percentage of Customers	**Bills in Warmer Month of Year (July 2016 Bills - $/mo.)**							
Bottom 10%	$9	$27	$76		$10	$33	$89	
Bottom 25%	$15	$37	$115		$18	$46	$128	
Median/Typical	**$23**	**$50**	**$162**	*Cooler Temp Zone*	**$27**	**$62**	**$173**	*Warmer Temp Zone*
Top 25%	$32	$70	$261		$38	$85	$231	
Top 10%	$44	$97	$442		$52	$116	$346	
Average (weighted by No. of Customers)	*$24*	*$54*	*$189*	*$51*	*$28*	*$66*	*$184*	*$55*
No. of Customers (FY16-17)	**Metro Low Temperature Zone**				**Valley High Temperature Zone**			
Bottom 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Bottom 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Median/Typical	**120,110**	**100,102**	**22,573**	**242,784**	**211,935**	**169,318**	**29,764**	**411,016**
Top 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Top 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Total	240,220	200,203	45,145	485,568	423,869	338,635	59,528	822,032

Total Residential R-1A Power Customers: 1,307,600

Note: Average monthly bills for the two Hottest/Coldest months do not represent average annual bills to customers.

FY 2016-17 Single Residential Water Demand BY Zone and Lot Size for Hottest/Coldest Months

Water Demand Levels (% of Accounts)	Lot Size in Low Temperature Zone (SF)					Lot Size in Median Temperature Zone (SF)					Lot Size in High Temperature Zone (SF)				
	0-7499	7500-10999	11000-17499	17500-43559	43,560+	0-7499	7500-10999	11000-17499	17500-43559	43,560+	0-7499	7500-10999	11000-17499	17500-43559	43,560+
	Water Use on Coldest Month of Year (January 2017 Bills, HCF/mo.)														
Bottom 10%	1	2	2	2	1	1	1	2	2	1	2	2	3	3	3
Bottom 25%	3	5	7	9	10	3	4	5	7	4	4	5	7	7	7
Median/Typical	**6**	**9**	**15**	**24**	**34**	**6**	**7**	**10**	**14**	**10**	**7**	**8**	**12**	**15**	**19**
Top 25%	9	15	27	42	88	9	12	18	27	21	11	13	20	26	44
Top 10%	13	22	42	65	105	14	19	30	46	48	16	19	30	41	91
Average	*8*	*12*	*21*	*30*	*46*	*8*	*10*	*15*	*21*	*20*	*9*	*11*	*16*	*21*	*32*
Water Demand Level	Water Use on Hottest Month of Year (July 2016 Bills, HCF/mo.)														
Bottom 10%	1	3	10	2	3	1	2	8	4	2	2	4	6	5	6
Bottom 25%	4	7	15	16	19	4	5	15	13	8	5	8	12	13	18
Median/Typical	**8**	**13**	**26**	**35**	**54**	**7**	**11**	**24**	**29**	**18**	**9**	**13**	**21**	**25**	**38**
Top 25%	12	19	38	56	97	12	18	38	53	46	14	19	31	41	92
Top 10%	17	27	53	84	197	17	27	53	80	215	19	26	42	60	123
Average	*10*	*16*	*30*	*40*	*56*	*10*	*14*	*29*	*37*	*33*	*12*	*15*	*24*	*30*	*53*

High Season: June 1 - Sep. 30; Low Season: Oct. 1 - May 31.

Estimated Water Bills from FY 2016-17 Hottest/Coldest Month Demands

No. of Customers	Lot Size in Low Temperature Zone (SF) 0-7499	7500-10999	11000-17499	17500-43559	43,560+		Lot Size in Median Temperature Zone (SF) 0- 7499	7500-10999	11000-17499	17500-43559	43,560+		Lot Size in High Temperature Zone (SF) 0-7499	7500-10999	11000-17499	17500-43559	43,560+	
Coldest/Wettest Month of Year (January 2017 Bills - $/mo.)																		
Bottom 10%	$6	$12	$12	$12	$6		$6	$6	$12	$12	$6		$12	$12	$18	$18	$18	
Bottom 25%	$18	$29	$41	$54	$62		$18	$24	$29	$41	$24		$24	$29	$41	$41	$41	
Median/Typical	**$35**	**$54**	**$99**	**$170**	**$252**	*Low Temp Zone*	**$35**	**$41**	**$62**	**$91**	**$62**	*Med Temp Zone*	**$41**	**$47**	**$77**	**$99**	**$129**	*High Temp Zone*
Top 25%	$54	$101	$196	$317	$695		$54	$77	$122	$194	$145		$69	$85	$139	$186	$334	
Top 10%	$86	$159	$319	$506	$834		$94	$134	$221	$350	$367		$110	$134	$221	$309	$720	
Average (weighted by No. of Customers)	*$38*	*$64*	*$118*	*$192*	*$323*	*$68*	*$38*	*$50*	*$77*	*$117*	*$93*	*$45*	*$47*	*$55*	*$89*	*$116*	*$194*	*$64*
Hottest/Driest Month of Year (July 2016 Bills - $/mo.)																		
Bottom 10%	$5	$14	$50	$9	$14		$5	$9	$37	$18	$9		$9	$18	$28	$23	$28	
Bottom 25%	$18	$32	$81	$87	$106		$18	$23	$81	$68	$37		$23	$37	$62	$68	$100	
Median/Typical	**$37**	**$68**	**$151**	**$213**	**$350**	*Low Temp Zone*	**$32**	**$56**	**$138**	**$170**	**$100**	*Med Temp Zone*	**$43**	**$68**	**$119**	**$144**	**$226**	*High Temp Zone*
Top 25%	$62	$108	$238	$364	$659		$62	$100	$236	$340	$289		$75	$106	$182	$247	$614	
Top 10%	$96	$166	$346	$565	$1,379		$96	$165	$344	$534	$1,506		$108	$156	$260	$384	$837	
Average (weighted by No. of Customers	*$41*	*$73*	*$163*	*$232*	*$429*	*$81*	*$38*	*$64*	*$155*	*$201*	*$250*	*$54*	*$48*	*$73*	*$125*	*$160*	*$307*	*$81*
Bottom 10%	3,587	836	547	436	115		17,489	3,697	1,199	586	174		8,010	6,706	2,956	1,917	164	
Bottom 25%	5,380	1,254	820	655	173		26,233	5,546	1,798	880	262		12,015	10,059	4,433	2,875	246	
Medium 50%	**17,934**	**4,180**	**2,734**	**2,182**	**575**	*Low Temp Zone*	**87,445**	**18,486**	**5,993**	**2,932**	**872**	*Med Temp Zone*	**40,049**	**33,531**	**14,778**	**9,584**	**821**	*High Temp Zone*
Top 25%	5,380	1,254	820	655	173		26,233	5,546	1,798	880	262		12,015	10,059	4,433	2,875	246	
Top 10%	3,587	836	547	436	115		17,489	3,697	1,199	586	174		8,010	6,706	2,956	1,917	164	
Total	35,868	8,360	5,468	4,363	1,150	55,210	174,889	36,971	11,986	5,865	1,744	231,455	80,097	67,063	29,556	19,167	1,641	197,524
													Total Single Residential Water Customers:					**484,189**

Note: Average monthly bills for the two Hottest/Coldest months do not represent average annual bills to customers.

Residential R-1 A Power Temperature Zones by Zip Code

Cooler Zone 1	Warmer Zone 2
90004 90275 90067	90001 90037 91304 91356
90019 90403 90210	90007 90057 91311 91403
90034 90717 90247	90014 90063 91330 91436
90045 90009 90292	90023 91105 91343 91606
90056 90025 90501	90033 91303 91355 90006
90069 90036 90732	90044 91309 91402 90013
90230 90047 90018	90062 91326 91423 90021
90272 90066 90028	91042 91342 91605 90032
90402 90094 90043	91302 91352 90005 90042
90710 90245 90049	91307 91401 90012 90061
90008 90291 90068	91325 91411 90020 91041
90024 90405 90212	91340 91601 90031 91214
90035 90731 90248	91346 90003 90041 91306
90046 90016 90293	91367 90011 90059 91324
90064 90027 90502	91406 90017 91040 91335
90077 90038 90744	91505 90029 91210 91345
90232 90048	90002 90039 91305 91364
	90010 90058 91316 91405
	90015 90065 91331 91504
	90026 91205 91344 91607
	91602 91604

Residential R-1 A Power Block Tiers

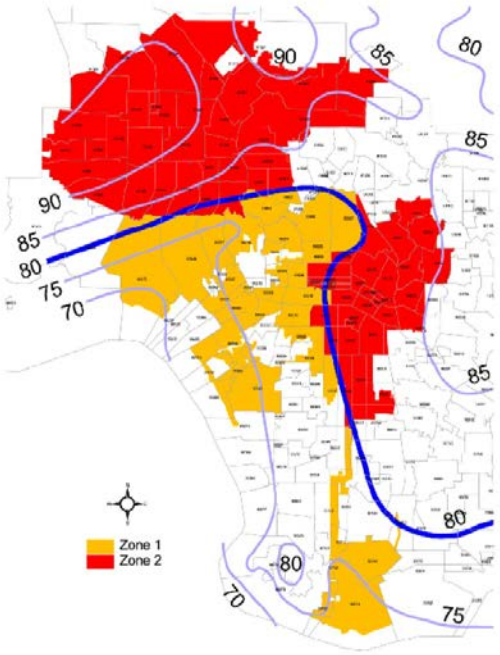
Zones define Tiered Rate Blocks for individual customers; OV customers are Zone 2.

Zone 1: Tier 1 Block is the first 350 kWh per month, Tier 2 Block is the Next 700 kWh, Tier 3 is greater than 1050 kWh

Zone 2: Tier 1 Block is the first 500 kWh per month, Tier 2 Block is the Next 1,000 kWh, Tier 3 is greater than 1500 kWh

High Season - June through September (4 months); Low Season - October through May (8 months).

Residential Power Temperature Zones Map



Residential Water Rate A Block Tiers (HCF/month)

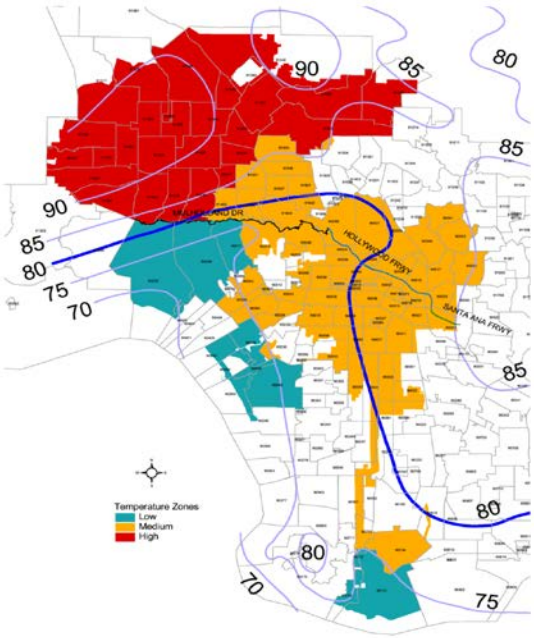
Description	Lot: Under-7,500 sq.ft.		Lot: 7,500-10,999 sq.ft.		Lot: 11,000-17,499 sq. ft.		Lot: 17,500 sq. ft. and over	
	Residential Water Seasons							
Temperature Zones	Low	High	Low	High	Low	High	Low	High
Tier 2 Usage Block Upper Value								
Coolest Zone	11	14	12	17	16	25	18	29
Medium Zone	11	15	12	18	16	27	18	32
Warmest Zone	11	17	12	20	16	33	18	39
Tier 3 Usage Blocks Upper Value								
Coolest Zone	17	26	20	35	32	59	38	71
Medium Zone	17	29	20	38	32	65	38	80
Warmest Zone	17	35	20	44	32	83	38	101

Tier 1 upper value is always 8 HCF/mo. Tier 4 usage is any use above Tier 3. Residential Water Seasons: High Season - June through September (4 months); Low Season - October through May (8 months). All values are HCF = hundred cubic feet (equals 748 gallons)

Residential Water Rate A Temperature Zones by Zip Code

Coolest Zone	Medium Zone	Warmest Zone
90045	90001 90021 90044 90247	91040 91331
90049	90002 90023 90046 90248	91041 91335
90066	90003 90024 90047 90501	91042 91340
90077	90004 90025 90048 90502	91105 91342
90094	90005 90026 90056 90710	91205 91343
90245	90006 90027 90057 90717	91210 91344
90272	90007 90028 90058 90744	91214 91345
90275	90008 90029 90059 91401	91302 91346
90291	90009 90031 90061 91403	91303 91352
90292	90010 90032 90062 91423	91304 91355
90293	90011 90033 90063 91504	91305 91356
90402	90012 90034 90064 91505	91306 91364
90403	90013 90035 90065 91601	91307 91367
90405	90014 90036 90067 91602	91309 91402
90731	90015 90037 90068 91604	91311 91405
90732	90016 90038 90069 91605	91316 91406
	90017 90039 90210 91606	91324 91411
	90018 90041 90212 91607	91325 91436
	90019 90042 90230	91326
	90020 90043 90232	91330

Residential Water Rate A Temperature Zone Map



Repeated on a single page, for convenience and comparing

FY 2016-17 Residential Power Use, Rates and Bills for Hottest/Coldest Months

Description	Fixed Power Access Charge (PAC) Tier in Metro Low Temperature Zone 1 PAC 1	PAC 2	PAC 3	Fixed Power Access Charge (PAC) Tier in Valley High Temperature Zone 2 PAC 1	PAC 2	PAC 3
Percentage of Customers	**Power Usage on Cooler Month of Year (KWh/mo., January 2017 Bills)**					
Bottom 10%	65	230	600	80	275	675
Bottom 25%	120	310	830	140	370	905
Median/Typical	**180**	**410**	**1120**	**215**	**485**	**1165**
Top 25%	250	550	1605	300	650	1525
Top 10%	330	710	2480	390	835	2105
Average	*223*	*454*	*1519*	*250*	*540*	*1397*
Percentage of Customers	**Power Usage on Warmer Month of Year (KWh/mo., July 2016 Bills)**					
Bottom 10%	55	170	455	65	215	555
Bottom 25%	100	245	675	120	310	780
Median/Typical	**155**	**335**	**945**	**185**	**420**	**1,035**
Top 25%	225	455	1,395	265	570	1,365
Top 10%	310	605	2,180	365	745	1,895
Average	202	372	1,280	228	463	1,228

Note High Season: June 1 - Sep. 30; Low Season: Oct. 1 - May 31.

No. of Customers (FY16-17)	Metro Low Temperature Zone			Subtotal	Valley High Temperature Zone			Subtotal
Bottom 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Bottom 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Medium/Typical	**120,110**	**100,102**	**22,573**	**242,784**	**211,935**	**169,318**	**29,764**	**411,016**
Top 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Top 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Total	240,220	200,203	45,145	485,568	423,869	338,635	59,528	822,032

Total Residential Power Customers: 1,307,600

FY 2016-17 Residential Hottest/Coldest Month Demands Monthly Power Use and Bills

Description	Fixed Power Access Charge (PAC) Tier in Metro Low Temperature Zone 1 PAC 1	PAC 2	PAC 3		Fixed Power Access Charge (PAC) Tier in Valley High Temperature Zone 2 PAC 1	PAC 2	PAC 3	
Percentage of Customers	**Bills in Cooler Month of Year (January 2017, $/mo.)**							
Bottom 10%	$11	$37	$107		$13	$44	$116	
Bottom 25%	$19	$49	$149		$22	$58	$158	
Median/Typical	**$28**	**$66**	**$203**		**$33**	**$75**	**$206**	
Top 25%	$38	$92	$292	*Cooler Temp Zone*	$45	$105	$272	*Warmer Temp Zone*
Top 10%	$50	$121	$453		$59	$139	$379	
Average (weighted by No. of Customers)	*$28*	*$70*	*$224*	*$64*	*$34*	*$80*	*$217*	*$66*
Percentage of Customers	**Bills in Warmer Month of Year (July 2016 Bills - $/mo.)**							
Bottom 10%	$9	$27	$76		$10	$33	$89	
Bottom 25%	$15	$37	$115		$18	$46	$128	
Median/Typical	**$23**	**$50**	**$162**		**$27**	**$62**	**$173**	
Top 25%	$32	$70	$261	*Cooler Temp Zone*	$38	$85	$231	*Warmer Temp Zone*
Top 10%	$44	$97	$442		$52	$116	$346	
Average (weighted by No. of Customers)	*$24*	*$54*	*$189*	*$51*	*$28*	*$66*	*$184*	*$55*
No. of Customers (FY16-17)	**Metro Low Temperature Zone**				**Valley High Temperature Zone**			
Bottom 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Bottom 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Median/Typical	**120,110**	**100,102**	**22,573**	**242,784**	**211,935**	**169,318**	**29,764**	**411,016**
Top 25%	36,033	30,030	6,772	72,835	63,580	50,795	8,929	123,305
Top 10%	24,022	20,020	4,515	48,557	42,387	33,864	5,953	82,203
Total	240,220	200,203	45,145	485,568	423,869	338,635	59,528	822,032

Total Residential R-1A Power Customers: 1,307,600

Note: Average monthly bills for the two Hottest/Coldest months do not represent average annual bills to customers.

Repeated on a single page, for convenience and comparing

FY 2016-17 Single Residential Water Demand BY Zone and Lot Size for Hottest/Coldest Months

Water Demand Levels (% of Accounts)	Lot Size in Low Temperature Zone (SF)					Lot Size in Median Temperature Zone (SF)					Lot Size in High Temperature Zone (SF)				
	0-7499	7500-10999	11000-17499	17500-43559	43,560+	0- 7499	7500-10999	11000-17499	17500-43559	43,560+	0-7499	7500-10999	11000-17499	17500-43559	43,560+
	Water Use on Coldest Month of Year (January 2017 Bills, HCF/mo.)														
Bottom 10%	1	2	2	2	1	1	1	2	2	1	2	2	3	3	3
Bottom 25%	3	5	7	9	10	3	4	5	7	4	4	5	7	7	7
Median/Typical	**6**	**9**	**15**	**24**	**34**	**6**	**7**	**10**	**14**	**10**	**7**	**8**	**12**	**15**	**19**
Top 25%	9	15	27	42	88	9	12	18	27	21	11	13	20	26	44
Top 10%	13	22	42	65	105	14	19	30	46	48	16	19	30	41	91
Average	*8*	*12*	*21*	*30*	*46*	*8*	*10*	*15*	*21*	*20*	*9*	*11*	*16*	*21*	*32*
Water Demand Level	Water Use on Hottest Month of Year (July 2016 Bills, HCF/mo.)														
Bottom 10%	1	3	10	2	3	1	2	8	4	2	2	4	6	5	6
Bottom 25%	4	7	15	16	19	4	5	15	13	8	5	8	12	13	18
Median/Typical	**8**	**13**	**26**	**35**	**54**	**7**	**11**	**24**	**29**	**18**	**9**	**13**	**21**	**25**	**38**
Top 25%	12	19	38	56	97	12	18	38	53	46	14	19	31	41	92
Top 10%	17	27	53	84	197	17	27	53	80	215	19	26	42	60	123
Average	*10*	*16*	*30*	*40*	*56*	*10*	*14*	*29*	*37*	*33*	*12*	*15*	*24*	*30*	*53*

High Season: June 1 - Sep. 30; Low Season: Oct. 1 - May 31.

Estimated Water Bills from FY 2016-17 Hottest/Coldest Month Demands

No. of Customers	Lot Size in Low Temperature Zone (SF)						Lot Size in Median Temperature Zone (SF)						Lot Size in High Temperature Zone (SF)					
	0-7499	7500-10999	11000-17499	17500-43559	43,560+		0- 7499	7500-10999	11000-17499	17500-43559	43,560+		0-7499	7500-10999	11000-17499	17500-43559	43,560+	
Coldest/Wettest Month of Year (January 2017 Bills - $/mo.)																		
Bottom 10%	$6	$12	$12	$12	$6		$6	$6	$12	$12	$6		$12	$12	$18	$18	$18	
Bottom 25%	$18	$29	$41	$54	$62		$18	$24	$29	$41	$24		$24	$29	$41	$41	$41	
Median/Typical	**$35**	**$54**	**$99**	**$170**	**$252**	***Low Temp Zone***	**$35**	**$41**	**$62**	**$91**	**$62**	***Med Temp Zone***	**$41**	**$47**	**$77**	**$99**	**$129**	***High Temp Zone***
Top 25%	$54	$101	$196	$317	$695		$54	$77	$122	$194	$145		$69	$85	$139	$186	$334	
Top 10%	$86	$159	$319	$506	$834		$94	$134	$221	$350	$367		$110	$134	$221	$309	$720	
Average (weighted by No. of Customers)	*$38*	*$64*	*$118*	*$192*	*$323*	*$68*	*$38*	*$50*	*$77*	*$117*	*$93*	*$45*	*$47*	*$55*	*$89*	*$116*	*$194*	*$64*
Hottest/Driest Month of Year (July 2016 Bills - $/mo.)																		
Bottom 10%	$5	$14	$50	$9	$14		$5	$9	$37	$18	$9		$9	$18	$28	$23	$28	
Bottom 25%	$18	$32	$81	$87	$106		$18	$23	$81	$68	$37		$23	$37	$62	$68	$100	
Median/Typical	**$37**	**$68**	**$151**	**$213**	**$350**	***Low Temp Zone***	**$32**	**$56**	**$138**	**$170**	**$100**	***Med Temp Zone***	**$43**	**$68**	**$119**	**$144**	**$226**	***High Temp Zone***
Top 25%	$62	$108	$238	$364	$659		$62	$100	$236	$340	$289		$75	$106	$182	$247	$614	
Top 10%	$96	$166	$346	$565	$1,379		$96	$165	$344	$534	$1,506		$108	$156	$260	$384	$837	
Average (weighted by No. of Customers	*$41*	*$73*	*$163*	*$232*	*$429*	*$81*	*$38*	*$64*	*$155*	*$201*	*$250*	*$54*	*$48*	*$73*	*$125*	*$160*	*$307*	*$81*
Bottom 10%	3,587	836	547	436	115		17,489	3,697	1,199	586	174		8,010	6,706	2,956	1,917	164	
Bottom 25%	5,380	1,254	820	655	173		26,233	5,546	1,798	880	262		12,015	10,059	4,433	2,875	246	
Medium 50%	**17,934**	**4,180**	**2,734**	**2,182**	**575**	***Low Temp Zone***	**87,445**	**18,486**	**5,993**	**2,932**	**872**	***Med Temp Zone***	**40,049**	**33,531**	**14,778**	**9,584**	**821**	***High Temp Zone***
Top 25%	5,380	1,254	820	655	173		26,233	5,546	1,798	880	262		12,015	10,059	4,433	2,875	246	
Top 10%	3,587	836	547	436	115		17,489	3,697	1,199	586	174		8,010	6,706	2,956	1,917	164	
Total	35,868	8,360	5,468	4,363	1,150	55,210	174,889	36,971	11,986	5,865	1,744	231,455	80,097	67,063	29,556	19,167	1,641	197,524
													Total Single Residential Water Customers:					**484,189**

Note: Average monthly bills for the two Hottest/Coldest months do not represent average annual bills to customers.

APPENDIX C

MATTERS TO BE INCLUDED
IN THE NEXT
DWP RATE REVIEW

OPA recommends this guidance for the DWP in in preparing a rate review, as it could make the review process more efficient and take less time.

General Matters

First, OPA cannot review rates that do not exist, are illustrative, or not the intended rates for the final request. An authorization that includes processes and procedures for changing rates, but not rate forecasts, does not allow OPA to begin doing any analytical work. OPA advises that unnecessary time can be saved by providing unit rates in every schedule, zone, year, and season, that are fully broken-down into rate component constituents. These unit rates need to be the rates DWP publicly publishes, and declares it intends to seek approval of, at the start of the rate review process. Publishing a method of forecasting is not equal to publishing a rate proposal. Proposals that are provisional cannot be analyzed. Doing otherwise has the potential to prevent OPA from having anything useful to say during an extensive public discussion about a forecast of rates that is stated to be merely indicative of the ultimately requested rates.

It is worth noting that six work products fully delineate a set of DWP rates, as follows:

1. The unit rates for each rate schedule
2. The functional item budgets
3. The financial model that links to those budgets
4. The factors used to allocate retail revenue in the financial model to individual schedules
5. A cost of service study that guides the allocation of the retail revenue to the individual schedules and factors
6. A draft Ordinance

A rate request that does not contain these congruent items (i.e., matched and linked results) is not ready to be analyzed, and a public process of dialogue that takes place without them can easily cause confusion or unintended misinformation.

OPA cannot issue an opinion on a rate request without a draft of the ordinances that has the support and tentative approval of DWP's legal advisors, while fully respecting that later stages of the review process for rates involves additional legal review by the City, with potential for change.

Specific Matters

OPA would encourage DWP to address explicitly in its rate report issues that DWP and OPA have worked on over the last several years. They include:

1. Defining the acceptable gap between rate budgets and annual budgets, to guide re-programming of revenues and set an upper limit (e.g., a 50% change in revenue requirement for an annual budget compared to the rate budget for the same year, or a 400% change in the flow-through account for a particular year authorized);

2. Explicitly identify the planned component of the revenue requirement for cash expenditure portions of base and pass-through capital budgets, and identify when it is not used as planned how it could be used to buffer against ratepayer impacts of deferred capital projects in a rolling multi-year period;

3. Analyze and discuss limits, if any, for revising capitalization ratios when it reduces the cash available for deferred capital projects DWP still intends to perform (e.g., 100% cash funding of an added $300 million in capital for a project deferred serially, in each year of the authorization);

4. Moving flow-through rate components toward a true-up process that has an even chance of being under or over the forecast, and is not historically found always under or always over forecast;

5. Study and discuss how the public could better be informed of credits being returned to them in rate adjustment calculations for revenue accrued for capital expenditures but not yet expended.

6. Refining the feedback loop between a new forecast and an over-collected balancing account, so mis-estimates are dampened over time under clearly trending forecasts;

7. Study and discuss late payment policies and practices, including any changes to ensure they remain fair and reasonable;

8. Publish for each year of the rate authorization and the following year the cash expenditure expected for base and flow-through accounts funding the capital plan;

9. Carefully evaluate the power time-of-use periods to reflect DWP's seasonally shifting peaks and troughs;

10. Explicitly set out non-discriminatory rates for load shifting, whether it involves demand response programs or vehicle battery charging, and apply consistent technical measures to like differentials of automated response by customers (e.g., responses in x seconds, vs. responses in y minutes vs. responses in z hours, or some block of hours);

11. Study and discuss at least 3 potential new programs for pilot demand response programs;

12. Discuss and propose changes if any to adjust cost of service targets between classes that results from the incremental RCA and RCA capital expenditures as delivered rather than planned;

13. Improve the transparency of purchased water so that the public can appreciate when water rates include larger volumes of cheaper water sourced from Owens Valley and the effects of favorable weather;

14. Study and discuss proration policies, including any changes, for seasonal changes in billing rates that align with the 2016 and any new rate structures for water and power.

15. Study and report on the lessons learned from moving water seasons to match power seasons.

16. Discuss the policy options available for the cap and trade funds that ratepayers receive, including the basic reasons why a full refund, partial refund, or no refund are recommended.

17. For any new programs funded by cap and trade funds, establish a criteria and project gating process similar to that used for water projects during development, design and construction. Also, for such programs, discuss and identify measurement and verification processes like those that apply to energy efficiency for projects after they are operational.

Appendix D: DWP's Community Engagement Costs

External Third Party Payments	NO CHANGE	NO CHANGE	ACTUAL EXPENDITURES	NO CHANGE	ACTUAL EXPENDITURES	RATE BUDGET	ACTUAL EXPENDITURES	RATE BUDGET	RATE BUDGET	FORECAST
Research & Development, Demonstration, Advertisement, Professional and Community Engagement Costs										
FY	14/15	15/16	15/16	16/17	16/17	17/18	17/18	18/19	19/20	20/21
La Kretz Innovation Campus[1]	**2,000,000**	**920,000**	**14,123,522**	**890,000**	**(2,508,385)**	**907,800**	**(9,238,985)**	**925,956**	**944,475**	**963,365**
Construction	2,000,000	400,000	-		-		-			
O&M		520,000	760,222	890,000	1,178,715		1,178,715			
FI 29402/Job I0215		-	9,741,400	-	(3,687,100)	-	718,300			
FI 21112/Job Y5100		-	3,621,900	-	-	-	(11,136,000)			
EPRI	**1,384,459**	**1,712,526**	**1,047,094**	**1,712,526**	**1,853,548**	**1,735,000**	**1,812,378**	**1,735,000**	**1,735,000**	**1,765,000**
Board Contract	1,384,459	1,384,459		1,384,459	1,853,548		1,812,378			
Board Amendment		328,067		328,067						
Research[2]	**620,150**	**763,949**	**1,695,000**	**799,227**	**786,746**	**845,212**	**1,110,449**	**892,116**	**929,959**	**968,558**
*For DWP Sponsorships**	620,150	588,949	1,695,000	624,227	786,746	670,212	1,110,449			
Climate Study		175,000	-	175,000	-	175,000	-			
Project funding[3]	**120,784**	**114,745**	**-**	**117,040**	**-**	**119,380**	**-**	**121,768**	**124,203**	**126,688**
Memberships	**2,510,663**	**2,385,130**	**1,962,691**	**2,456,684**	**1,810,091**	**2,505,817**	**1,810,091**	**2,555,934**	**2,607,052**	**2,659,193**
Advertisements[4]	**1,100,000**	**2,000,000**	**2,616,761**	**2,100,000**	**2,439,848**	**2,205,000**	**2,439,848**	**2,315,250**	**2,431,013**	**2,552,564**
*For DWP Sponsorships**	950,671	950,671	455,054		615,412		615,412			
*Drought/Water and/or Energy Conservation***	149,329	1,049,329	2,161,707		1,824,436		1,824,436			
School/Education[5]	**1,223,439**	**1,223,439**	**817,862**	**1,345,783**	**928,681**	**1,345,783**	**928,681**	**1,372,699**	**1,400,153**	**1,428,156**
*For DWP Sponsorships**	673,439	624,439	441,529	696,783	332,842		332,842			
El Pueblo	65,000	65,000	-	65,000	-		-			
Education Grants	485,000	534,000	376,333	584,000	595,839		595,839			
Industry Event	**408,631**	**388,199**	**230,861**	**395,963**	**369,088**	**403,883**	**369,088**	**411,960**	**420,200**	**428,604**
Community Non-Profit	**255,087**	**249,985**	**236,364**	**380,550**	**418,389**	**399,578**	**418,389**	**419,556**	**440,534**	**462,561**
Grant Awards[6]	**1,170,000**	**1,080,000**	**767,495**	**1,800,000**	**735,000**	**1,836,000**	**960,000**	**1,927,800**	**2,024,190**	**2,125,400**
Water Conservation	270,000	270,000	272,495	500,000	105,000		120,000			
Energy Efficiency	900,000	810,000	495,000	1,000,000	630,000		840,000			
Innovation Fund (WC and EE)			-	300,000	-		-			
Promotional[7]	**110,965**	**105,417**	**112,485**	**107,525**	**300,920**	**109,676**	**300,920**	**111,869**	**114,106**	**116,389**
Total (rounded)	**10,900,000**	**10,940,000**	**23,610,135**	**12,110,000**	**7,130,000**	**12,410,000**	**910,000**	**12,790,000**	**13,170,000**	**13,600,000**

1. La Kretz 14/15 Spending was for construction. Costs for FY 15/16 were for O&M for the Campus, no construction . FY 16/17 and beyond represent projected O&M for the campus. Listed costs are only for maintenance, operations and general outreach of the campus (i.e. flyers, banners, displays). LADWP does not provide funding for LACI operations. The LACI the campus generated $1,135,497.32 in revenue in the 16/17 Fiscal Year. FI/Job 21112/Y5100 and 29402/I0215 are capital FIs with no future dollars budgeted.
2. Research includes funding to the Water Research Foundation, Cal-Tech for Earthquake Research, etc.
3. Related to pilot projects and such programs as Earthquake Soil Liquefaction Assessment, water resources needs, etc - no dollars spent in 15/16.
4. Increase in costs are due mostly to promote water conservation during the drought.
5. School and Education costs includes funding for Water Conservation/Energy Efficiency Grants and other outreach efforts (i.e. Science bowl, classroom materials and educational outreach on electrical safety). These costs also include the history of Water Exhibit at El Pueblo.
6. LADWP provides Innovation grants for Energy Efficiency and Water Conservation. These grants are reviewed and awarded by LADWP on specific programmatic goals related to water and power issues. Grant funding are within the energy efficiency and water conservation portfolio. Grants primarily focus on behavioral conservation measures and recordable savings are noted in LADWP Water Conservation and Energy Efficiency Totals.
7. Promotional items include materials that promote water and power programs and encourage conservation and safety. Costs also include outreach to LADWP's retirement community.
* "DWP Sponsorships" are for Community, Research, Advertising and Promotional funding under $150,000. These items have a formalized approval process that requires justification, budgeting infor mation to ensure costs are appropriate.
**Previously "Drought Related" 16/17 forward will now include Drought/Water and/or Energy Conservation.
**Updated budget numbers will be confirmed when the Budget is final.

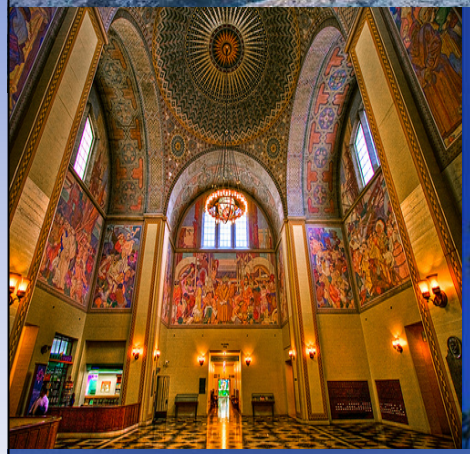
Interim Rate Review Report for DWP Board

Office of Public Accountability/ Ratepayer Advocate
City of Los Angeles
opa@LAcity.org
tel. 213-978-0220

May 23, 2019

Appendix E







Interim Rate Review: Revised Timeline

- February 26: DWP submits interim rate proposal to Board
- March 12: unit rates received for water and power
- May 13, 60 days after receipt of complete proposal: OPA to issue review of interim rate proposal to DWP Board
- May/June: DWP Board to act by July 1
- Council may “245” DWP Board action on interim rate

The Interim Review Report: Questions to be Covered in the Review

- What is performance of DWP as a whole?
  - Did the rate structures work as intended for FYE 2016, 2017, 2018?
  - Are there any material mis-alignments of authorized revenue requirements for 2019-2020?
  - Are budgets adequate for goals?
  - Can DWP execute these budgets?
- What are resulting rates?
- Challenges to be addressed in the next full rate review
  - Revenue requirements
  - Rate Design
  - Other policy issues not covered by revenue requirements and traditional rate design
  - Recommended schedule for next full rate review
- OPA recommendations:
  - Adjustments to the Base Rate Revenue targets

OPA Conclusions

- Did the rate structures work as intended for FYE 2016, 2017, 2018?
  - Yes
- Are there any material mis-alignments of authorized revenue requirements?
  - Yes. O&M budgets are under pressure in power.
- Are budgets adequate for goals?
  - Yes, but FYE2020 goal on power capital is in excess of 2016 rates, plans, and ability to execute
- Can DWP execute these budgets?
  - Yes and no: capital plans in power are a stretch
- Base Rate Revenue Targets for FYE2019 and FYE2020
  - Power BRRT should be reduced by 2%
  - Water BRRT should remain as is in Ordinance
- Formal 4 year or shorter complete rate review cycle is needed.

Power System Budget & Financial Planning

Systemwide Average Unit Rates (Cents per KWh)	Final (Actual) 16	FY 16-17	FY 17-18	Current FY 18-19	Forecast FY 19-20
Power Rate Case 143 in 2016	14.7	15.8	16.8	17.3	18.1
Five Year Simple Average Annual Increase:					***3.9%***
NC Power Rate Case 43 in 2019	14.8	15.2	16.4	18.1	19.3
Five Year Simple Average Annual Increase:					***5.3%***
Negative 2% Power Rate Case 44: Five Year Simple Average Annual Increase:					***5.2%***

No Change (NC) Rate Case 43 uses 2016 Rate Case 143 Base Rate Revenue Target (BRRT) values, while Negative 2% Case 44 reduces the FY 2019-20 BRRT amount by 2%.

Power System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	**1039**	**1030**	**1051**	1082	1127
Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	**1486**	**1465**	**1540**	1593	1653

Power System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	1039	1030	1051	1082	1127
	43	ACTUAL	1081	1093	1098	1285	

Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	1486	1465	1540	1593	1653
	43	ACTUAL	1173	1130	1324	1496	

red = final budget estimate, based on 4/2/2019 IBIS data

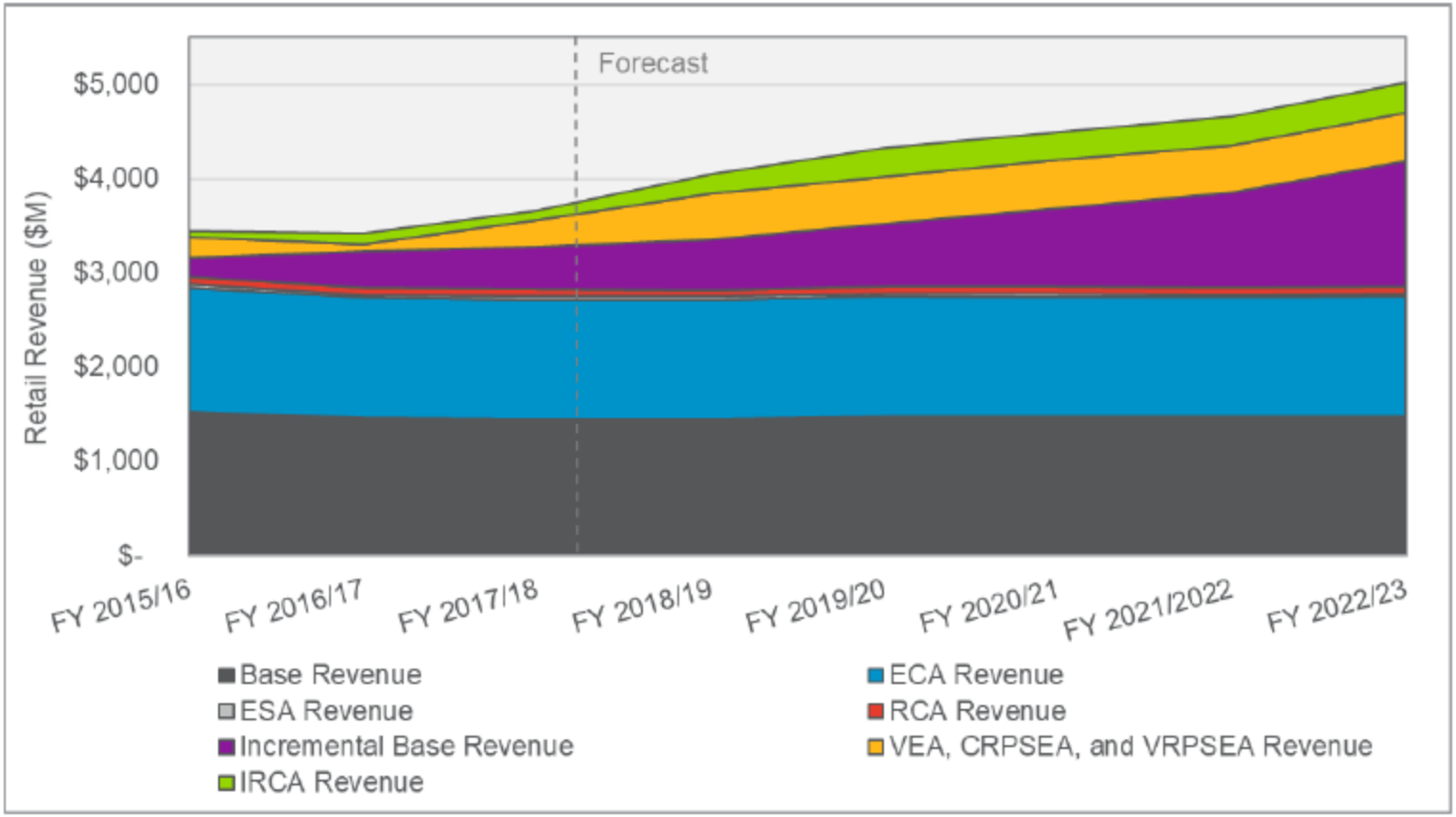
Power System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	**1039**	**1030**	**1051**	1082	1127
	43	ACTUAL	**1081**	**1093**	**1098**	**1285**	
	43	REQUEST (Navigant 2/2019)				1274	1395

Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	143	RATES	**1486**	**1465**	**1540**	1593	1653
	43	ACTUAL	**1173**	**1130**	**1324**	**1496**	
	43	REQUEST (Navigant 2/2019)				**1535**	1730
		Proposed DWP Power Final Budget (5/2019)					1735

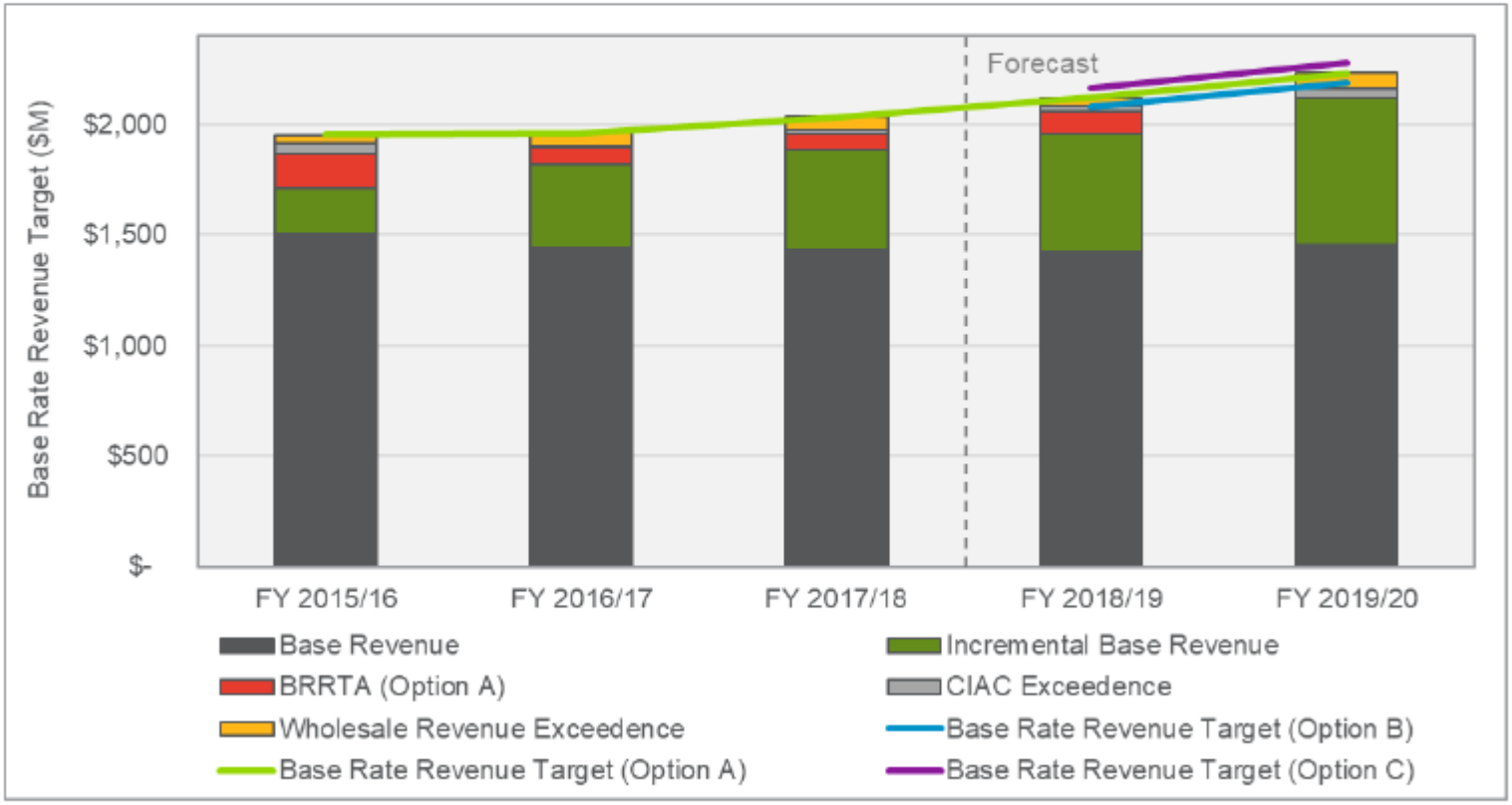
red = final budget estimate, based on 4/2/2019 IBIS data

Figure 5-3. Power System Retail Revenue Actuals and Forecast



Source: Power System Financial Plans (PS Case 43, PS Case 44, and PS Case 45), January 25, 2019

Figure 5-31. Base Rate Revenue vs. BRRT



Source: Power System Financial Plan (PS Case 23 and PS Case 26), November 16, 2018; Power System Financial Plan (PS Case 27), January 2, 2019

Base Rate Revenue Target / Power Proposed Base Case

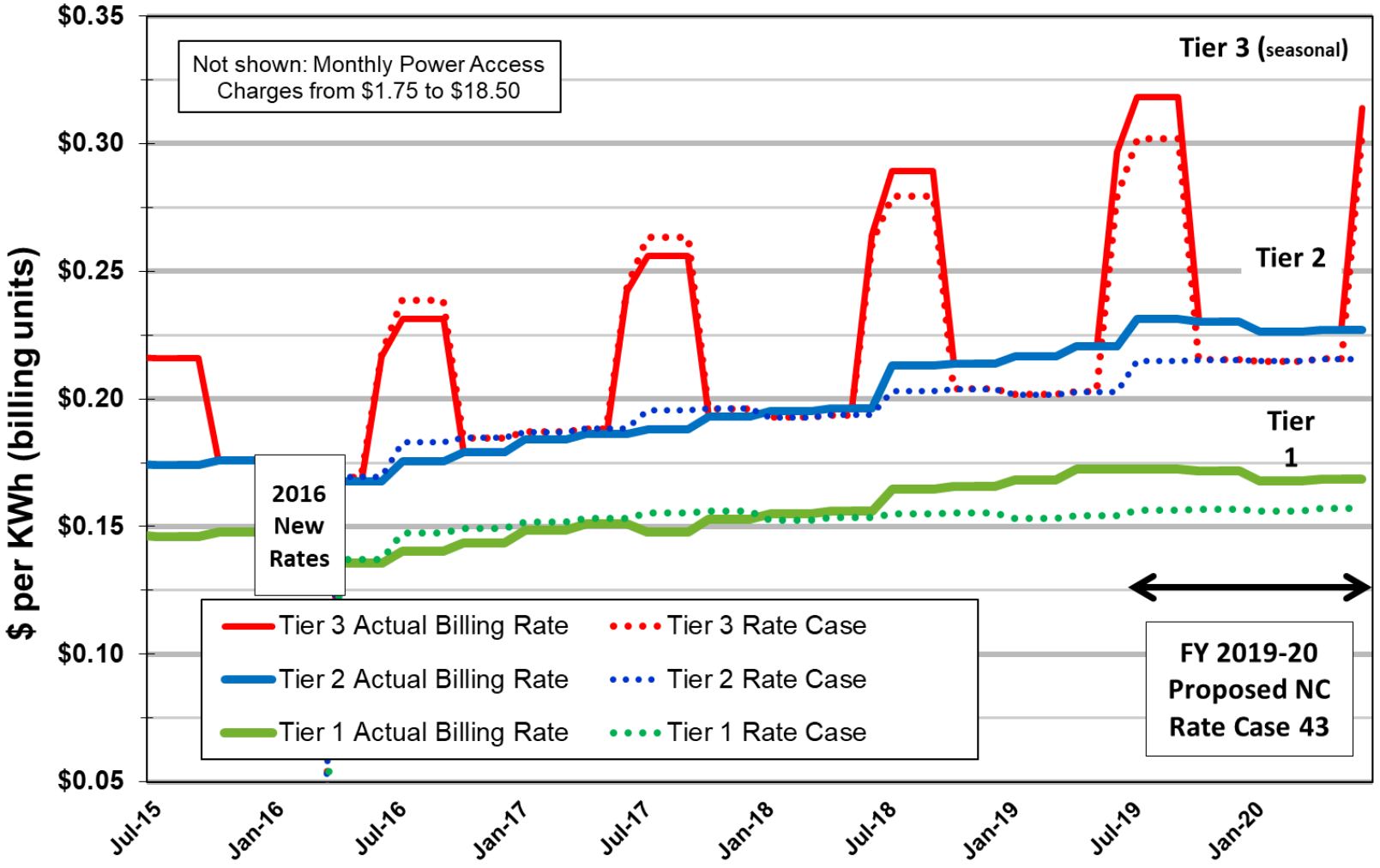
Dollars in millions												2 yr total chg
	Case		**FY15/16**	yr-yr chg	**FY16/17**	yr-yr chg	**FY17/18**	yr-yr chg	**FY18/19**	yr-yr chg	**FY19/20**	FYE20 vs FYE18
BRRT	**43**		**$ 1,951.0**		**$ 1,960.0**		**$ 2,032.0**		**$ 2,120.0**		**$ 2,230.0**	
				$ 9.0		$ 72.0		$ 88.0		$ 110.0		$ 198.0
				0.46%		3.67%		4.33%		5.19%		9.34%
												4.76%/yr

Base Rate Revenue Target / Power Proposed Base Case vs (2%)

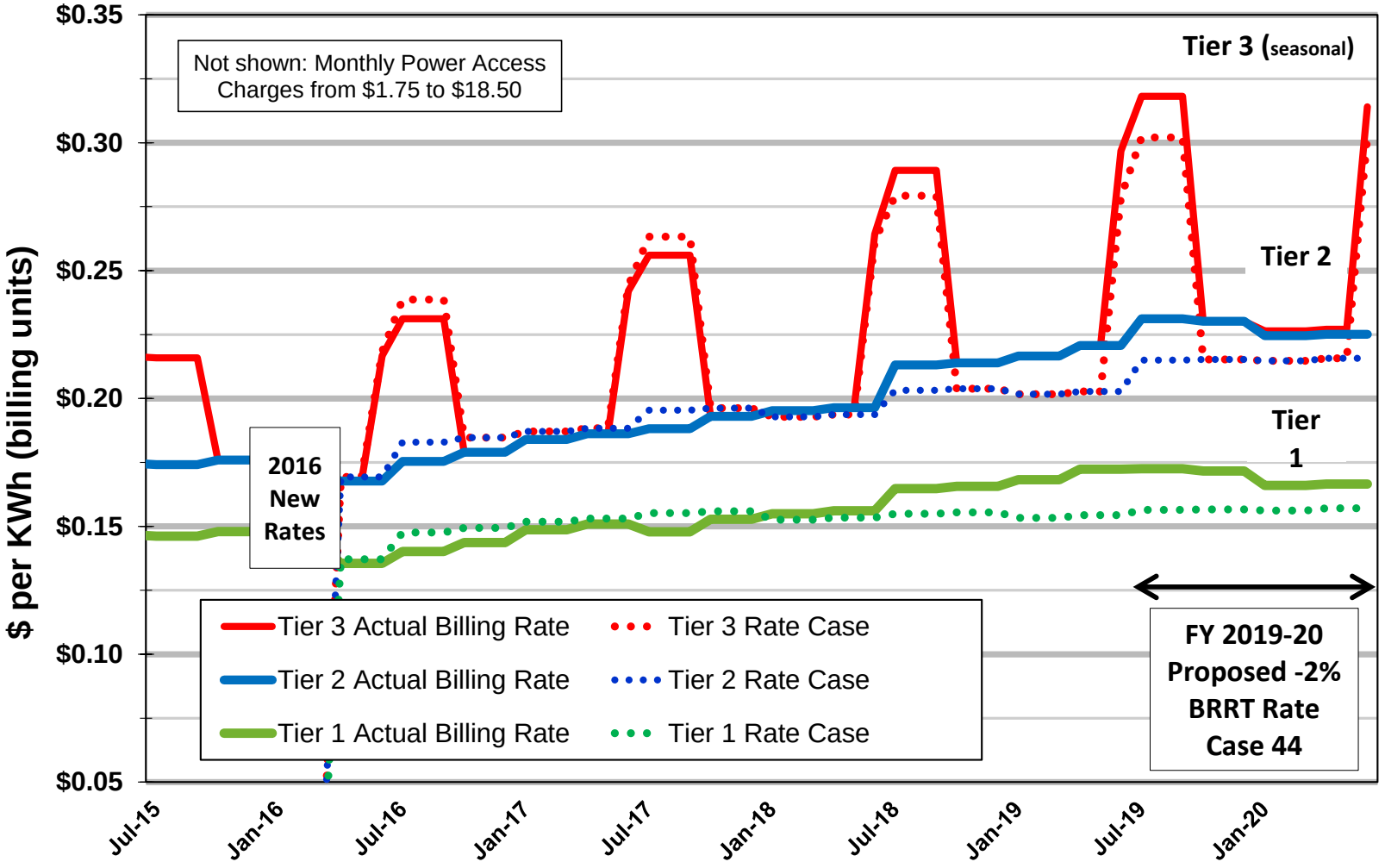
Dollars in millions							2 yr total chg	
	Case	**FY17/18**	yr-yr chg	**FY18/19**	yr-yr chg	**FY19/20**	FYE20 vs FYE18	vs Case 43
BRRT	**43**	**$ 2,032.0**		**$ 2,120.0**		**$ 2,230.0**		
			$ 88.0		$ 110.0		$ 198.0	
			4.33%		5.19%		9.34%	
							4.76%/yr	
	44	**$ 2,032.0**		**$ 2,077.6**		**$ 2,185.4**		**per year**
	Reduce BRRT 2%		$ 45.6	vs Case 43	$ 107.8	vs Case 43	$ 153.4	**$ (43.5)**
			2.24%	$ (42.4)	5.19%	$ (44.6)	7.38%	total
							3.72%/yr	$ (87.0)

Base Revenue is 52% of Total Retail Revenue

Schedule R-1 Residential Dwelling Power Rates -- Proposed BRRT NC Rate Case 43



Schedule R-1 Residential Dwelling Power Rates -- Minus 2% BRRT Rate Case 44



Water System Budget & Financial Planning

Systemwide Average Unit Rates ($/HCF)	Final (Actual) FY 15-16	FY 16-17	FY 17-18	Current FY 18-19	Forecast FY 19-20
Water Rate Case 94 in 2016	$5.26	$5.77	$5.71	$5.94	$6.39
Five Year Simple Average Annual Increase:					***5.3%***
Water NC Rate Case 47 in 2019	$4.93	$5.59	$6.43	$6.76	$6.94
Five Year Simple Average Annual Increase:					***7.12%***
Negative 2% Water Rate Case 48: Five Year Simple Average Annual Increase:					***7.06%***

No Change (NC) Rate Case 47 uses 2016 Rate Case 94 Base Rate Revenue Target (BRRT) values, while Negative 2% Case 48 reduces the FY 2019-20 BRRT amount by 2%.

Water System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	**459**	**473**	**485**	492	502

Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	**983**	**1052**	**949**	1121	1356

Water System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	459	473	485	492	502
	47	ACTUAL	460	492	486	534	

Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	983	1052	949	1121	1356
	47	ACTUAL	668	746	706	714	

red = final budget estimate, based on 4/2/2019 IBIS data

Water System Request

Operation & Maintenance Expenditures							
	case		FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	**459**	**473**	**485**	492	502
	47	ACTUAL	**460**	**492**	**486**	**534**	
	47	REQUEST (Navigant 2/2019)				538	581

Capital Expenditures			FY15-16	FY16-17	FY17-18	FY18-19	FY19-20
	94	RATES	**983**	**1052**	**949**	1121	1356
	47	ACTUAL	**668**	**746**	**706**	**714**	
	47	REQUEST (Navigant 2/2019)				762	929
		Proposed DWP Water Final Budget (5/2019)					831

red = final budget estimate, based on 4/2/2019 IBIS data

Base Rate Revenue Target / Water Proposed Base Case

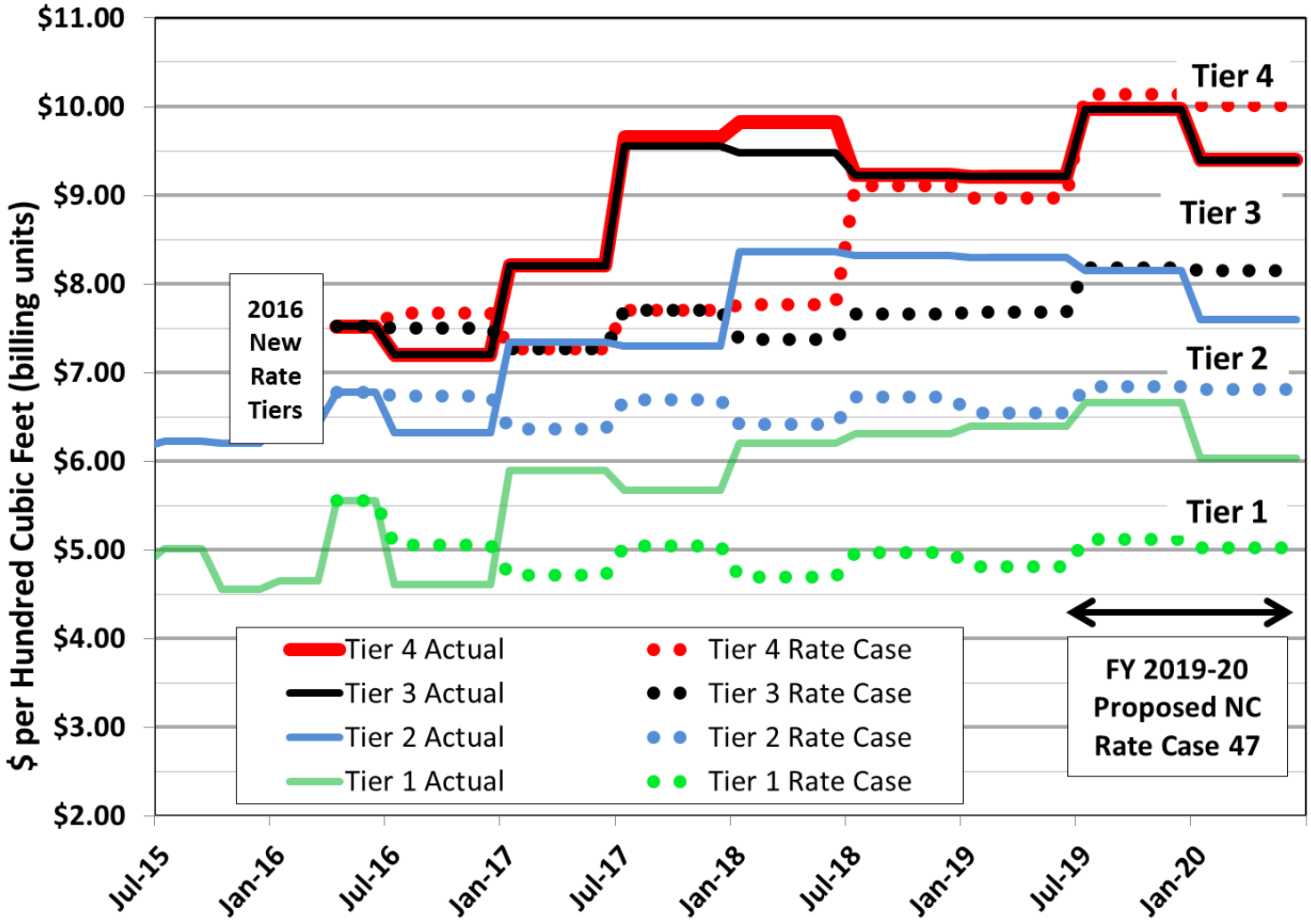
Dollars in millions													2 yr total chg
	Case		**FY15/16**	yr-yr chg	**FY16/17**	yr-yr chg	**FY17/18**	yr-yr chg	**FY18/19**	yr-yr chg	**FY19/20**	FYE20 vs FYE18
BRRT	**47**		**$ 342.2**		**$ 436.1**		**$ 486.0**		**$ 490.3**		**$ 507.9**	
				$ 93.9		$ 49.9		$ 4.3		$ 17.6		$ 21.9
				27.44%		11.44%		0.88%		3.59%		4.47%
												2.24%/yr

Base Rate Revenue Target / Water Proposed Base Case Vs. (2%)

Dollars in millions							2 yr total chg	
	Case	**FY17/18**	yr-yr chg	**FY18/19**	yr-yr chg	**FY19/20**	FYE20 vs FYE18	vs Case 47
BRRT	**47**	**$ 486.0**		**$ 490.3**		**$ 507.9**		
			$ 4.3		$ 17.6		$ 21.9	
			0.88%		3.59%		4.47%	
							2.24%/yr	
	48	**$ 486.0**		**$ 480.5**		**$ 497.7**		**per year**
	Reduce BRRT 2%		$ (5.5)	vs Case 47	$ 17.2	vs Case 47	$ 11.7	**$ (10.0)**
			-1.13%	$ (9.8)	3.59%	$ (10.2)	2.44%	total
							1.23%/yr	$ (20.0)

Base Revenue is 37% of Total Retail Revenue

Schedule A Residential Dwelling Water Rates -- Proposed BRRT NC Rate Case 47

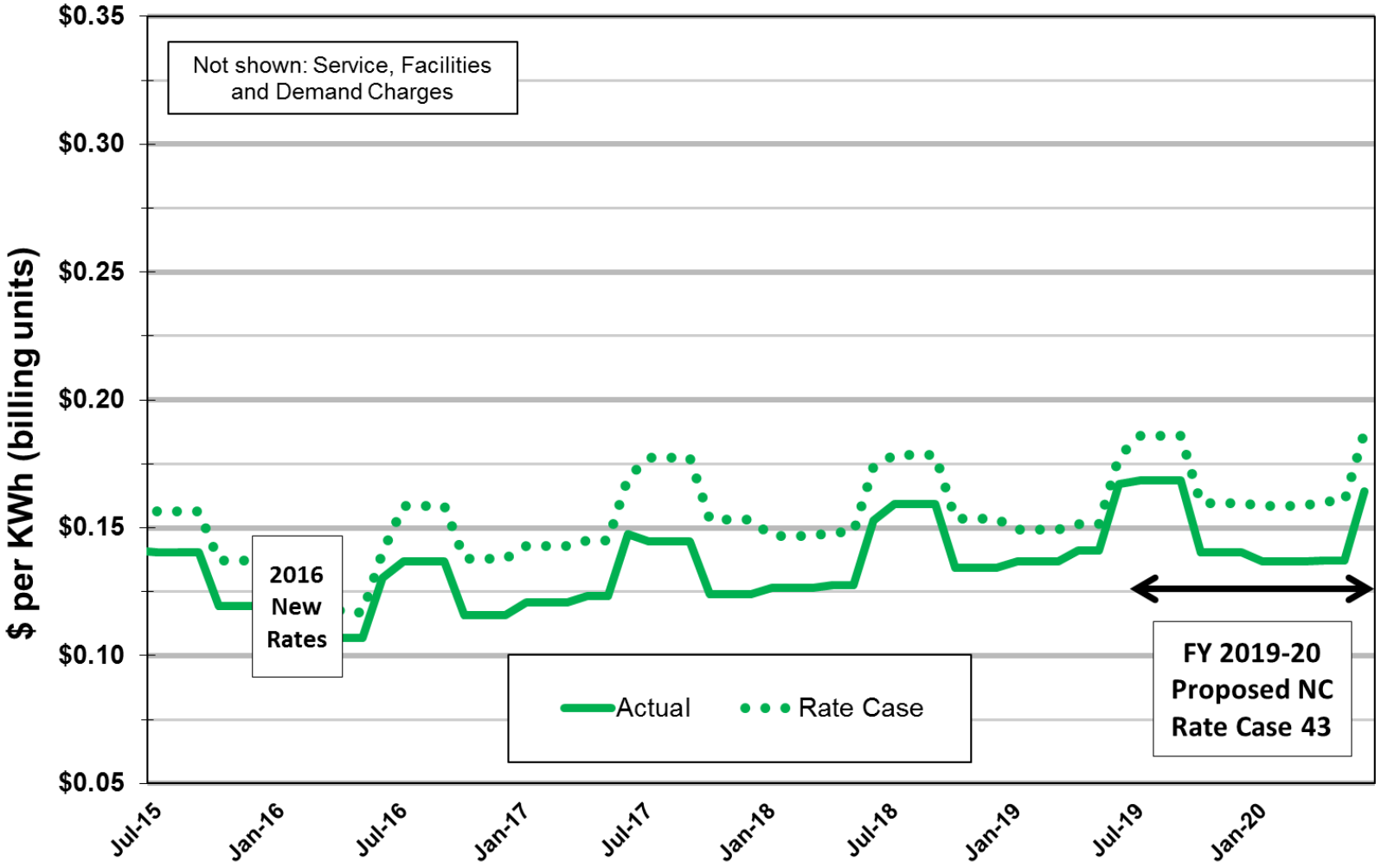


What's Not in the Interim Review before the DWP Board?

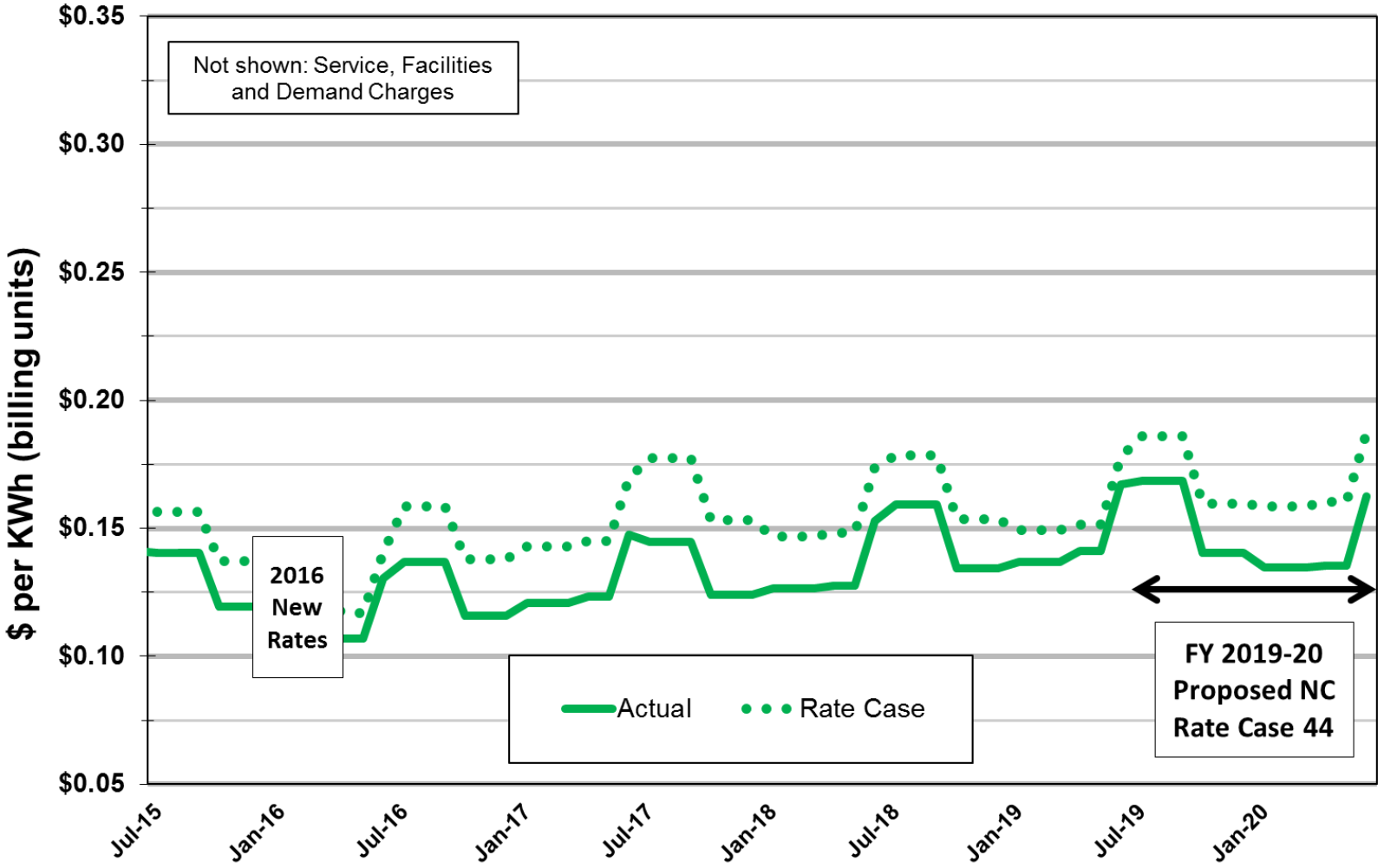
- What can be changed under the interim review rules in the 2016 Ordinances?
  - DWP Board can increase or decrease base rates +2% to -2% versus 2019/2020 Base Rate Targets.
  - Changes outside this +/- 2% range require Ordinance changes along with Council and Mayor action.
- If there is no full rate review before July 2020, the 2016 Ordinances provide for a base rate adjustment with limited inflation protection to base rate revenue for FY20/21 and after.
- No changes are intended in rate structure for existing rates without a full rate review.
  - No new or special rates are added, like new EV rates. Depending on the level of impact on other customers, these might be handled by Ordinances for solely the new or special rates, outside of the interim review.
- Metrics changes can be handled through an existing process before the DWP Board.

APPENDIX

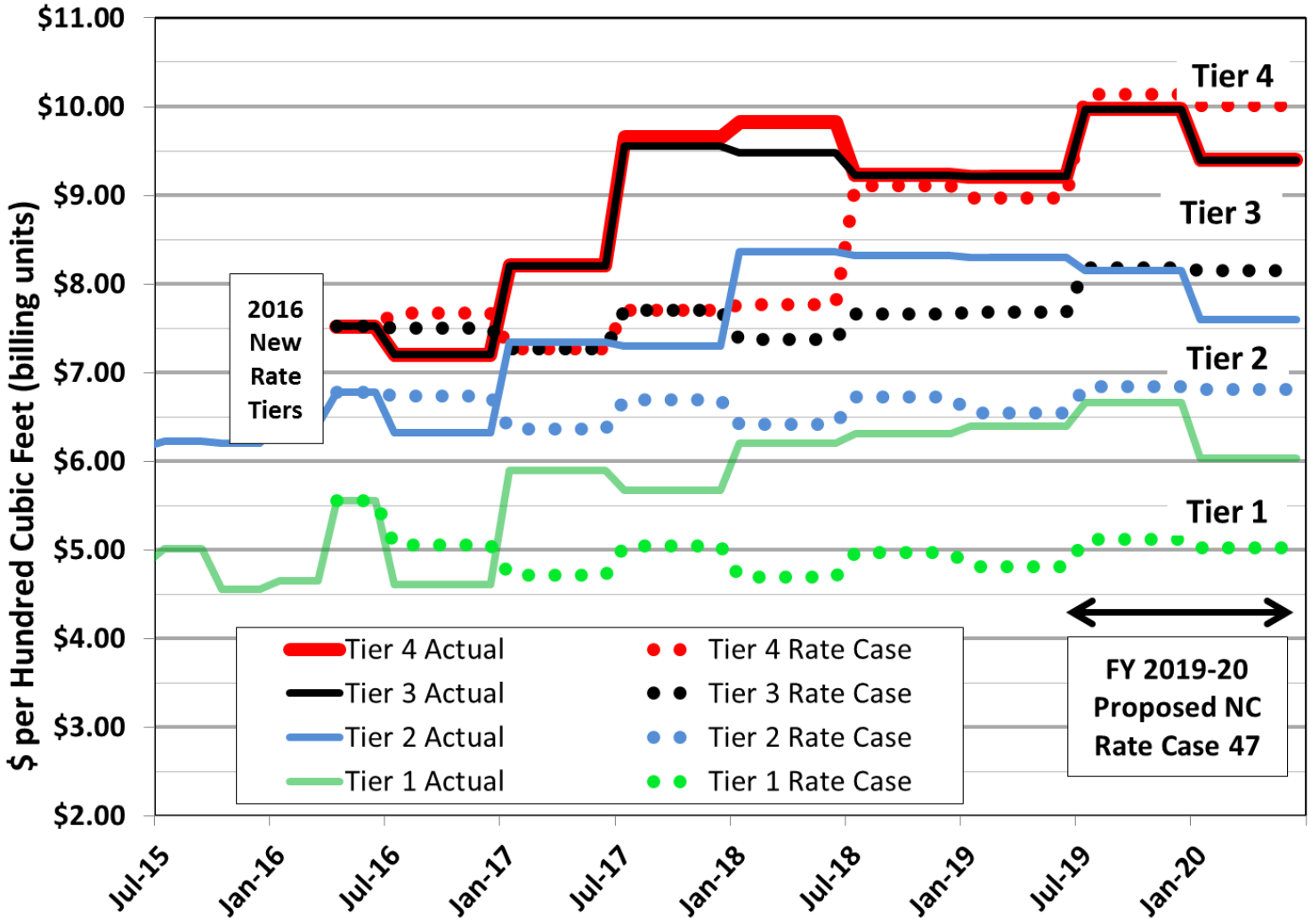
Sch A-1A Small Commercial Power Rates -- Proposed BRRT NC



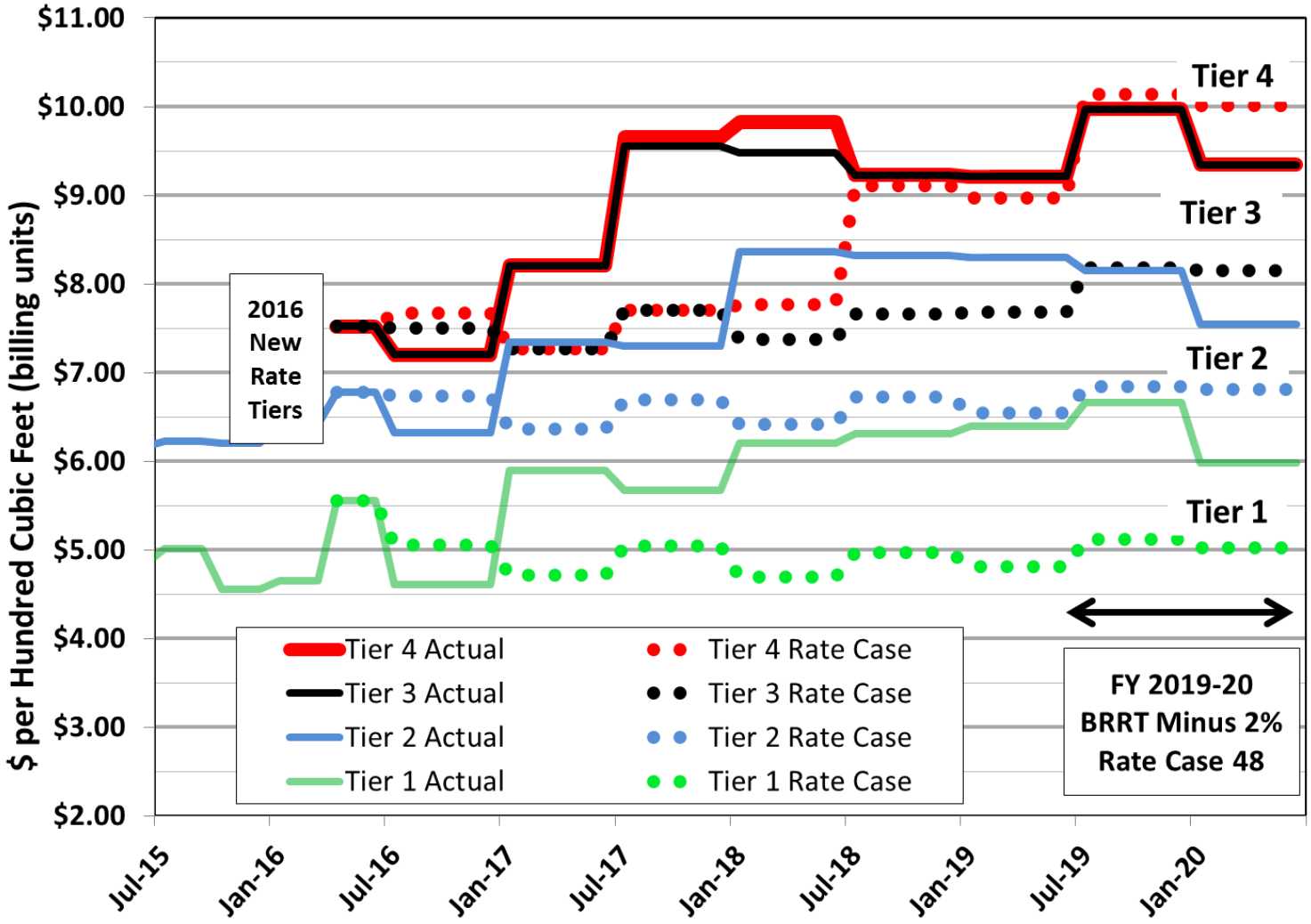
Sch A-1A Small Commercial Power Rates -- Alternative Minus 2% BRRT Rate Case 44



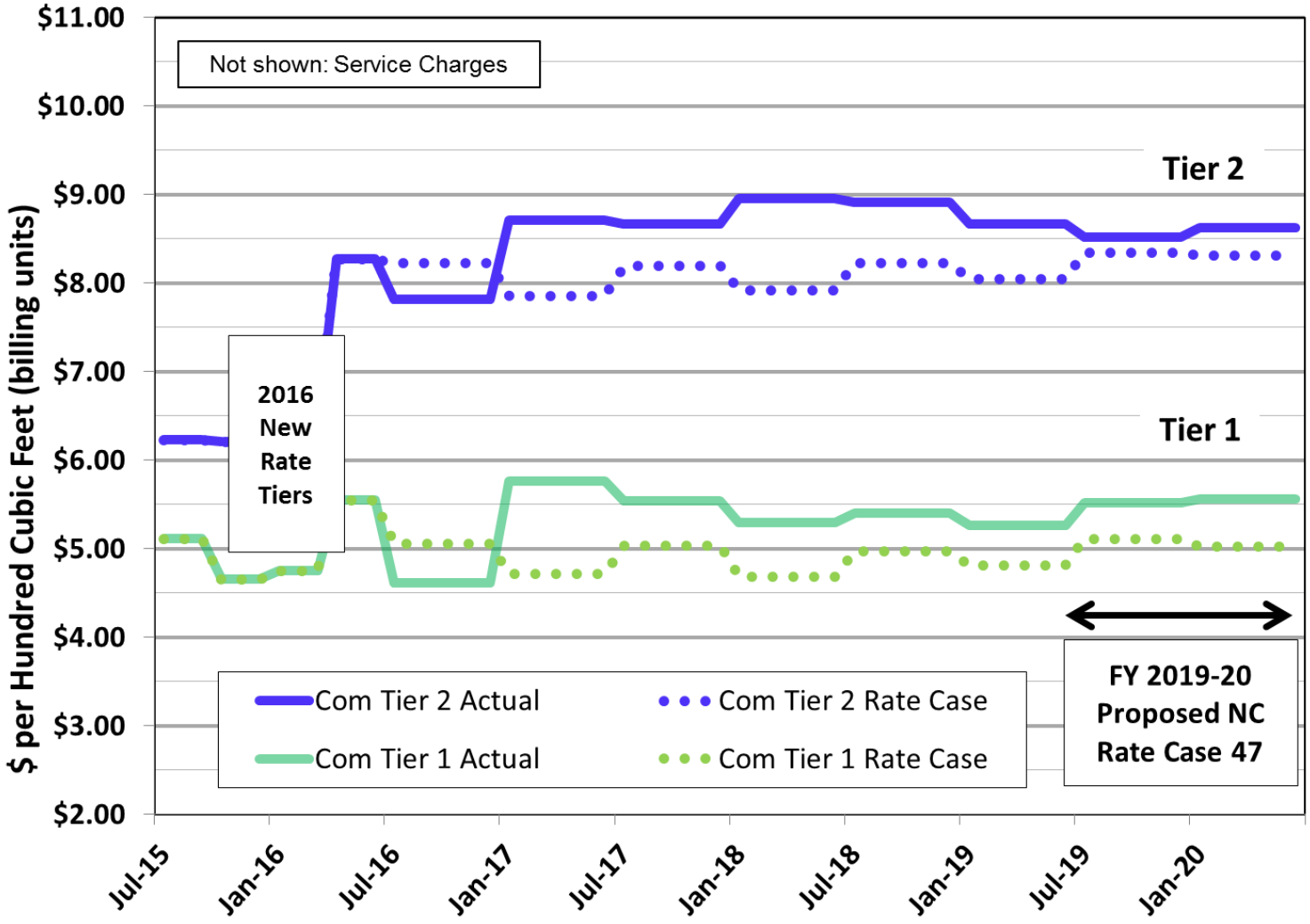
Schedule A Residential Dwelling Water Rates -- Proposed BRRT NC Rate Case 47



Schedule A Residential Dwelling Water Rates – Alternative BRRT -2% Rate Case 48



Schedule C Commercial Water Rates -- Proposed BRRT NC Rate Case 47



Schedule C Commercial Water Rates -- Alternative BRRT -2% Rate Case 48