

REPORT FROM

OFFICE OF PUBLIC ACCOUNTABILITY

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To: The Board of Water and Power Commissioners

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Subject: OPA Report Requested by Board Resolution 022-097
Governance Review and Recommendations

I. A SHORT SUMMARY OF THE HIGHEST PRIORITY RECOMMENDATIONS

1. Provide amnesty to all small commercial and residential customers for any exceptions that extend the length of bills described under Rule 17D and that concern consumption before June 30, 2018.
2. Regular rate reviews should be institutionalized by the City Council and with Board support. Supervise and authorize proposed rate designs before they get to an execution stage.
3. Verify the class action settlement restitution, providing public information as to its structure and composition. Verify large account billing and meters for power and water.
4. Build a stronger and more cohesive power meter-to-cash function at the front end, and the back end. Separate these functions from: (a) primary custody of meter data, and related data management, from operation or construction of generation, transmission and distribution, and (b) revenue verification.
5. Supervise plans and fund execution of deferred implementation within the Customer Service Division (CSD), as reorganized. Delegate authority to fill funded positions for CSD and the Power Control Center. Modernize roles and duties in CSD.
6. Supervise the measures by which DWP begins to turn-off or remove retail meters that are active and communicating but not billed.

II. INTRODUCTION

The Office of Public Accountability's (OPA's) responsibilities include reporting to the City Ethics Commission and City Controller if it becomes aware of fraud, waste or abuse. Despite a high level of access to DWP executives and staff, OPA has no direct evidence of any crimes. Nevertheless, cumulatively and over time, OPA has become aware of important omissions in two areas: 1) active and communicating power meters not associated with an account, and 2) field practices concerning power meter locations, testing and collections. OPA is also uncertain about the location and use of smart water meter data for the City's Park & Recreation Department.

OPA has no information suggesting any of these topics are material in size, or exceed 4% of DWP revenue in any single year.

OPA recognizes DWP has been through an extremely difficult and painful adjustment as it catches up systems investment deferred in the 1990's. Systems today are not just "new," but a quantum leap forward from where DWP's older systems resided in 2010. OPA's cost benchmarking work suggests recent budgets for IT have been far too low. DWP has made a great deal of progress in many areas of customer service and the meter-to-cash functions, as well as improving its IT delivery and testing capabilities. There is more to do, but it should be recognized that this report is not intended to cover all the successful aspects of remediation that have taken place since 2013.

OPA has interpreted the DWP Board's request for governance recommendations broadly, considering how to further re-build public trust in the billing function and rates. The OPA has reframed some issues as governance matters arising from lack of internal controls or shared situational awareness.

This report should not be interpreted as a statement supporting conclusions about intentions by one or more individuals, or even sub-groups. Projecting collective intent on a utility of this size would be a mistake. OPA often learns in its discussions with DWP staff that there is not one big, coordinated mind inside DWP that retains all important facts. It is worth noting that the culture at DWP is shaped by its unusual growth history. Meeting the demands of new customers has the tendency to render so many other challenges at DWP less important.

OPA's charter and purpose broadly is to help improve DWP by providing advice about impacts to rates. While OPA has provided detailed recommendations, OPA welcomes discussion and improvements to them. It is entirely plausible that the DWP will have better methods of accomplishing the same end. These recommendations are likely too extensive to be simultaneously undertaken, and OPA assumed some prioritization will occur to mesh with items already in progress.

OPA's advice concerning a Program Management Office for IT has not changed, has been previously published, and is available on OPA's website.¹ As such, OPA omits this and cyber-security from this report.

An important under-appreciated feature of using the billing system DWP has is that it will require DWP to stay current with industry change. This will require increasing competencies and capabilities, within and across DWP, now that the system is more stable. It will often be uncomfortable, and hopefully the needed adjustments will start to come along more easily.

III. BACKGROUND: A SELECTIVE HISTORY OF BILLING SYSTEM CHALLENGES

1. OPA became aware in 2013-2014 that the losses on DWP's power system were growing at a steady one-half percent per year. Because the growth was consistent, it was not likely this was caused by the system's physical features. OPA was told this phenomenon, which had to have been caused by human action, began during the recession of 2009-2010.
2. In early September of 2013, DWP began its rollout of a new customer billing system. By late October 2013, the Financial Services Office (FSO) was informing OPA that it estimated \$300 million of revenue was going missing and unbilled. FSO was concerned about meeting bond requirements. The new billing system was unable to provide credible information about consumption or earnings. At the time, a complete bimonthly cycle in the new system had not yet completed, which called into question how such an amount could have accrued so quickly. OPA began to monitor revenue and production closely, with FSO's assistance, assessing under and over charge errors. When the year ended, coverage ratios for bonds were satisfied.
3. During OPA's efforts to monitor revenues, it learned that approximately \$70 million of power revenue had not occurred as previously forecasted between July 1 and September 1 of that year, before the new billing system launched. Load and production had contracted and responded to a July 1 rate increase, which came very close on the heels of a rate increase the prior fall. The revenue was not lost because the production related to it had not occurred. This reduction was a typical response to price, called "price elasticity."
4. Also, OPA learned that a portion of accounts receivable from the old system were extremely old or involved closed accounts. Some unknown fraction of \$60 to \$90 million (for both power and water) had probably been recovered as bad debt expensed over prior decades. However, the old system had sometimes left data in place so that DWP could evaluate credit of a returning customer.

¹ "Learning from DWP's Billing System Challenges," July 1, 2015. (<https://opa.lacity.org/html/documents.html>)

5. OPA asked for more details several times, but DWP either could not extract it from the old system or tie it by account to expensed bad debt. In one of the aging reports from the old system, OPA could see that approximately \$40 million of arrears could not be assessed for different aging levels in the last or oldest bracket, or determine how much related to closed accounts. Systems generally have aging for brackets in 30 day increments, and no one had contemplating needing brackets for 3, 7 or 10 years.
6. OPA had an opportunity to observe through complaints that DWP's collection practices were sometimes more like tax collection practices than rate collection practices. DWP services provide unsecured credit to individual persons, which renders the application of the uniform commercial code different for residential customers and commercial customers. For example, utilities would have not necessarily expect that family members will pay the unsecured credits of a dead residential customer who is an individual. This is one example of what is termed "due" discrimination (as compared to undue discrimination) in the utility business. Customers are not always treated exactly alike because of a difference that is deemed reasonable due to a clear rationale.
7. Combined, the reduced generation and the deep arrears were, at the most, approximately \$110 million that OPA learned about during fiscal year 2013-2014, not \$300 million. OPA communicated the load reduction to General Manager Marcie Edwards, and was involved in ongoing discussions with the Chief Financial Officer Phil Leiber over how to clarify the amount of bad debt already expensed.
8. Because losses growing at half a percent per year cannot be sustained indefinitely, OPA also persuaded DWP to work towards identifying the source of this loss. OPA was subsequently informed that 2,400 meters were active and communicating, without being connected to a billing account. This is strong, but entirely circumstantial evidence of power theft. This would be the equivalent of 480 retail meters installed in each of five years between 2010 and 2014, but not connected to an account or billed.
9. DWP informed OPA that there were some notable individuals associated with some of these meters. The DWP uses a Service Level Agreement as a mechanism to associate a meter with an account. A meter that was read by Radio in the field (AMR), or reported data wirelessly to Infrastructure (AMI), directly into the Itron meter data management system (called MV-90), would normally have as part of communication protocols a location identifier, not a person.
10. DWP initiated efforts to contract with a specialty firm to forensically examine this issue of growing losses and missing meters. That work was cancelled, and OPA was informed that the billing system stabilization effort was the priority. All activities were centralized under the project manager for billing stabilization. At that time, Mr. Paul Paradis, the City's outside legal counsel, was that project manager.

11. In 2014, this billing system stabilization effort had been led by Randy Howard. Mr. Howard had hired TMG to do a root cause analysis, and TMG's report was completed in October of 2014. That report identified approximately \$62.5 million in non-billed accounts. The report identified about \$39.1 million (about 60%) of under-charges as originating with "large accounts," which is variously referred to with a variety of metrics as about the top 20 accounts, or accounts over \$1M per year. In a recent unrelated review of large accounts, OPA observed that approximately 80% of the accounts listed were government accounts.
12. Mr. Howard's role in guiding the billing system effort abruptly ended with his retirement in January of 2015. OPA often heard him say that the City needed to pay its bills, and it was not ok for departments to have a standard operating practice of not paying. One such department was the Department of General Services, which had \$27 million budgeted for water and electricity in 2013-2014. Another related situation involved the Harbor, which had refused to pay \$20M of bills that DWP believed were correctly billed.
13. Other issues involved the timing of revenue received for street lighting and lags in payment for street lighting. These issues were distinguishable from straight non-payment, or attempts to barter away the bill by charging DWP for functions other City departments rendered to DWP. Some departments have negotiated payment arrangements to pay off their arrears over time. Between 2010-2011 and 2013-2014, City budgets for general fund paid water and electricity had gone down about 12%. (City Budget 2013-2014, p. 206.)
14. Mr. Howard's replacement was David Wright, who quickly moved to install Paul Paradis as the project manager on billing system stabilization in the first quarter of 2015. Mr. Paradis worked closely with three people: Mark Townsend, Kathy Wright, and Flora Chang. Mark Townsend was the project manager at the time the new billing system was launched, and had worked closely with Ms. Wright and Ms. Chang in that role.
15. On July 1, 2015, OPA published its report, "Learning from DWP's Billing System Challenges." Information about reduced load and bad debt previously expensed were removed from that draft report due to a wide range of uncertainty about the amounts. OPA revealed the status of these items in an attachment using audited numbers for accounts receivable, unbilled and otherwise accrued retail revenue. The only public version of estimates at that time was the increase in bad debt reserve, which had grown approximately \$100 million.
16. In fall of 2015, after more than a year of seeking estimates, OPA was briefed on work Mr. Townsend had done to size up over-charges since OPA had stopped closely tracking revenues in July 2014. "Restitution," the return of these erroneous charges to customers, was estimated, but not particularly firm. At that time, estimates were reportedly and

approximately \$17 million. The remainder was deposits the DWP owed departing customers. Even with deposits, the total was under \$30 million.

17. In December of 2015, DWP proposed adding \$300 million to the power rate case. The rate review was within weeks of a decision by the DWP Board. DWP then estimated approximately \$100 million in “lost” revenue and \$200 million in system remediation costs. DWP provided cost estimates of how these remediation funds would be spent. OPA was not in support of this addition at the 11th hour of the process, and DWP withdrew it.
18. Shortly after the rates were approved by City Council, in May of 2016, DWP resurrected its request for \$300 million in the form of a regulatory asset. This would allow O&M for customer service to spread over future years. OPA and DWP ultimately agreed to set up this regulatory asset in an amount “up to” \$300 million, subject to an annual cost review of the items DWP proposed to include. This amount of \$300 million exceeded the O&M growth in the five-year rate review period, which had forecasted very little growth in O&M.
19. OPA learned slowly that there was little ability for DWP to incorporate its suggestions about appropriate software documentation standards (e.g., ISO standards), provide remediation plan review, or encourage appropriate testing capabilities. The individuals that agreed with OPA in IT and Customer Service simply were not in control of the remediation or system stabilization. Both OPA and Customer Service sought unsuccessfully some kind of advance notice of changes that produced new surges of phone calls, arising from un-staged billing system changes and customer communications.
20. OPA’s repeated questions about the audit features of the software were met with a long string of changing reasons it could not be done. To this day, OPA is unsure that the audit (and other) software functions are fully enabled to deliver bill software capabilities.
21. System remediation was made more difficult by unclear, overlapping, and poorly defined roles for field, billing, customer service, rate design, meter management, meter data management, revenue collection, and revenue verification. DWP’s duties, descriptions, and responsibilities hail from an era before modern computing. Having to translate it all into a business process and map it into systems revealed a lack of shared understanding. These roles are currently stitched together with good will and smoothed over with some grievances and compromises. Not the least of these compromises is an ongoing difficulty field workers have making appointments with customers in advance, and collection practices that accept customer payments in the field or on unrecorded phone calls. Both practices are now considered sub-standard or disreputable, a result aided by the large amount of scams affecting everyone.

22. OPA became aware through a complaint from a former DWP employee that the implementation of the water rate design was inappropriately “backwards” at two points in the year, when seasonal rates were changed. DWP derives a unique customer-specific rate based on use, instead of applying a standard non-discriminatory rate to each customer’s water tier allotment. The allotment drives the rate calculation. At a meeting on this issue in 2017, DWP staff recognized the error, which arises from the introduction of two new and additional water price tiers. However, Mr. Townsend was unwilling to incorporate the correction into IT’s heavy work load.
23. In January 2017, DWP’s billing unit was removed from the Customer Service Division’s scope of responsibilities.
24. By April 2017, the OPA Executive Director was subjected to extraordinary pressures by General Manager David Wright.
25. By summer of 2017, the billing system was ramping up plans to begin paying restitution in the fall of 2017. Rather than round-up the restitution amounts to the nearest dollar, DWP chose to correct bills “to the penny.” This opened the door to large numbers of small changes. At approximately 10 million bills a year and three years, very small amounts could add up.
26. Before remediation was completed in March to June of 2018, DWP made liberal use of adjustments within its delegated discretion for “customer relations,” to correct or compensate for corrections generally at parity with settlement corrections, and address indirectly matters which did not fit within existing rules. For example, there is no rule that specifically addresses being billed for a meter that is on someone else’s premises.
27. In mid-2018, about the time the restitution was substantially completed, OPA became aware through multiple complaints that atypical back-bills covering charges to the inception of an account (i.e., decades) were occurring now that collection activity had commenced again. Also, without an appointment made, customers could find themselves accused of failing to provide meter access. OPA is aware that a large number of deviations from DWP’s policies, procedures, and practices could occur, made possible by the fragmentation of the customer service billing unit.
28. A variety of system-initiated and managerial supervision problems began to hobble the Customer Relations Officer (CRO) after restitution was completed in mid-2018. At this point, five levels of managerial review were reportedly needed to correct bill errors.
29. OPA later learned that the CRO was asked to supervise the a separate team involved in correcting bills. This role, as proposed, would involve the CRO signing the time sheets of people when she did not have any knowledge of their work and was not proximate to their location. OPA later learned that this CRO was removed from her duties, and the

CRO function or staff was variously described as disbanded or incorporated back into the Customer Service Division.

30. A transition for “high” readings from meters began in January 2017, after billing was moved out of Customer Service. Some accounts involved meters that, on their face, can be determined to have been malfunctioning, as they were generating over 100 houses’ worth of electricity for a single house and billing period (e.g., over 50,000 kwh). Prior to mid-2017, these bills were kept low by a filter in the billing system that recognized the data was too high.
31. A simple field investigation could determine that a normal house connection is not able to receive 50,000 kwh of power. Due to manipulation and a lack of appropriate roles and systems, appointments for field inspection did not always occur in a manner consistent with DWP’s policies, procedures and practices. This problem would be particularly acute for those customers with high meters. Defending those meter readings, even temporarily, would have consequences for estimates of lost revenue.
32. With respect to many complaints OPA heard over time, it became clear that DWP often puts the burden of proof on customers to show they have not done anything wrong. This “proving a negative” is not a reasonable utility operating procedure. Until the culture and meter inventory systems get aligned, OPA believes it is important for the CRO to be able to correct errors in the meter-to-cash chain. CRO has served as a unique and supervised opportunity for customers to escalate their billing issues, and reverse undocumented results, while identifying systemic problems with systems or key improvements in training.
33. The long or large backbills that emerged after the settlement restitution was completed occurred at a time when the audit function was unavailable to protect both DWP employees (from false accusation) and their customers (from atypically large bills). Meanwhile, efforts related to large customer under-charging, or communicating, active and unbilled meters, fell into a zone of relative silence.
34. In the late summer of 2018, after most restitution was completed under the settlement, OPA began its annual review of costs DWP proposed to put into the regulatory asset. These costs for the billing stabilization had gone up significantly since 2016-2017. Approximately \$20 million of O&M costs were included that had already been budgeted in the rates and not spent by Customer Service. This occurred by using annual budgets instead of rate budgets to identify extra-ordinary customer service costs. OPA claimed this was unreasonable, and DWP ultimately concurred.
35. OPA also disagreed that Mr. Bender, the class action litigation settlement’s court monitor, could in future years appropriately create costs placed into the regulatory asset for a variety of other expert assistance. OPA produced a report on the regulatory asset

issues in fall of 2018, providing this guidance. This report and cost review led DWP to dissolve that regulatory asset.

36. OPA was first included in the DWP Board meetings closed sessions in the Spring of 2019. Prior to that time, OPA had been excluded since OPA's 2012 inception.
37. More recently, DWP's audited power financial statement for fiscal year 2020-2021 and 2019-2020 provides unbilled sales of \$269.1 million and \$49.7 million, respectively, or a total of approximately \$318 million. These power amounts include (among other things) services wherein the bills have not yet issued because the snapshot of the financial condition takes place during the middle of some customers bill cycles.
38. OPA has concluded that the epicenter of irregular power metering that is not billed centers on the provision, deployment, and inventorying of meters. While there is clear improvement in this area over time, OPA anticipates DWP is not yet organized around its long term needs for power meter integration, especially with increasingly complex meters.
39. Employees of DWP have told OPA that the power division does not wish to improve in this area, but it is difficult to know if that is true or why. DWP's field staff is too low, and meeting new customer, equipment replacement, and operational continuity demands with the same crews is difficult. DWP's overtime in this area confirms this opinion. However, resource scarcity alone cannot explain why a small commercial customer would ever be told that 18 months is *not* a long time to wait for a broken meter to be replaced, or that DWP does *not* test sub-meters it owns and bills, or reconcile them with billings from master meters.
40. Also more recently, DWP's audited power financial statement for fiscal year 2020-2021 and 2019-2020 provides estimates of bad debt expense of \$77.5 million and \$37.7 million, respectively. Although OPA recommended in 2015 that class specific amounts be made public for the amounts *actually* expensed as bad debt, DWP has had difficulty gaining this level of information from the system. For example, the write-off module in the software was unavailable until 2019, and without it no aging reports were generated by the system.
41. These expensed power bad debts are passed on to all customers through a charge called the Variable Energy Adjustment (VEA), which is the point where sales are decoupled from revenue. (This mechanism is sometimes called "the" decoupler.) Most utilities recover costs for bad debt expensed from all ratepayers by an addition to the revenue requirement, and DWP's method accomplishes the same thing. This practice at DWP stabilizes revenues.
42. The DWP tracks its forecast of power Net Energy for Load (NEL) within each year, against actual. This measure is about production and is sometimes called "gross load."

This tracking has a consistent and unusual ability to hit the forecast within less than one percent, and has a highly unusual ability to hit one half of one percent deviation. The power industry generally cannot hit a load forecast number with half a percent deviation consistently, given weather and economic uncertainties. DWP's forecasting for rate setting purposes under-scores a possible problem with meters not billed, as those meters' data could, in theory, be incorporated for forecasting or discarded. Also, DWP could have some demand response customers that are more likely to use power in the last six months of its fiscal year. Because NEL has consistently trended down, as have retail power loads, it has now become unreasonable to forecast rates with an increase in load. While peak loads forecasted in 2014 have been experienced, the energy is about 5,000 GWH per year lower.

43. The Special Master's report in the pending class action litigation discusses the City transfer, and therefore OPA is including in this report a brief summary of the recent history, to improve transparency. Inter-City payments to DWP in the last three years (2018-2019, 2019-2020, and 2020-2021) have totaled \$1.75, \$1.81, and \$1.78 billion. The majority of these funds are the Transfer, utility users taxes (UUT), DWP retiree healthcare returned to DWP, and retail billings of the Sanitation Department (BOS).
- a. The amount, net of the Transfer, UUT, BOS, and DWP retiree items, has been \$87.0, \$84.1, and \$83.8 million, respectively.
 - b. The Street Damage Restoration Fee (SDRF) included in a. above was \$22.9, \$32.2, and \$19.3 million, respectively.
 - c. Subtracting the new SDRF, these items were \$64.0, \$51.9, and \$64.5 million, respectively. This is a very uniform amount for activity-based billing determinants.²
 - d. The SDRF is a non-discriminatory fee that, on its face, applies to all constructing entities equally. Without this fee the remaining Inter-City payment items are 3.66%, 2.86%, and 3.62% of the total amounts in the first sentence of paragraph 43. These are very uniform amounts, with the first pandemic year (in the middle) lower than the other two, which are only .04% different.
 - e. DWP's Receipts & Appropriations retail revenue for these three years were \$5.34, \$5.44, and \$5.74 billion, respectively. The last two of these figures are estimates.
 - i. Total Inter-City payments in the first sentence above were 32.8%, 33.3%, and 31.0% as large as DWP's retail revenue. This is provided to illuminate

² A consolidated report of the SDRF payments of each utility working inside the City, investor or publicly owned, would be a useful exercise, now that some experience has been gained with the incentives to align street work with the City.

only relative size of the flow of Inter-City payments. These total amounts do not reflect water and power retail rates.

- ii. A more relevant view of the ratio is Inter-City payments net of the Transfer, UUT, BOS retail bills, and DWP retiree items in a. above. These ratios are 1.63%, 1.55%, and 1.46% of retail revenues actual (2018-2019), estimated (2019-2020) and budgeted (2020-2021). This includes the SDRF. Without the SDRF the ratios are 1.20%, 0.95%, and 1.12%.
 - iii. The combined UUT and Transfer over these same three years was \$647.7 million, \$662.7 million, and \$645.7 million for 2018-2019, 2019-2020, and 2020-2021. The Transfer has been relatively stable: \$232.5 million, \$229.9 million, and \$218.3 million, respectively.
 - iv. In 2013-2014, the Transfer was \$253.0 million and the UUT was \$330.6 for a combined \$583.6 million. *The combination of the two has grown by \$62.1 million since that year, while litigation initiated over the billing system's 2013 rollout has continued.* Growth in UUT has more than made up for limitations placed on the Transfer after 2013-2014.
 - f. It is unclear to OPA whether Sanitation is paying for an updated allocation of billing system costs incurred over the last decade.
 - g. It is unclear to OPA whether Inter-City fundings for activities that all departments have, like hiring, is applied in a non-discriminatory manner.
 - h. OPA is aware that DWP has audited and, with the City's assistance, corrected issues with overhead charges applied to Inter-City fees or activities, back to the year 2000.
44. OPA has not in eight years of inquiry about Smart Grid or Smart Meter planning heard the Power Division acknowledge that it cannot reasonably select itself as the primary data custodian of power meter consumption data. Turnover in the Power Division metering roles is reportedly high over long periods of time. The responsibility for testing meters resides in a different sub-division from meter procurement. Meter specialists need to influence IT plans for AMI meters, and ensure smart meters are returned to vendors if they do not meet any specification. Specifications and testing will become more complicated as meter software is more integrated with metering.
- a. DWP practices have led to the complete removal of grant-funded smart meters (a pilot program), and very high expenditures for systems that do narrow compliance tasks, like report rooftop solar generated.

- b. DWP practices for planning in meter engineering tend to exclude Financial Services and Customer Services, and their appropriate roles – revenue verification and primary data custody.
- c. OPA rarely hears anyone discuss the engineering upstream from the starting point of the meter, whether for electric vehicles or solar or time-of-use meters (e.g., can it be billed, tested, maintained, and data integrated). This is the “reverse” of starting with the outcome and working down to the meter point, or “reverse engineering” the billing outcomes.
- d. OPA has observed no established protocols for moving meters and meter data between systems, while providing uninterrupted billing.

All these issues will only become more difficult with the creation of pilot programs and customer interactions made feasible by the new billing system.

- 45. OPA has been increasingly concerned with the customs, culture and practices at the Power Division relative to a variety of power revenue topics. These concerns range from the low end (atypical), to the mid-range (odd), and the high end (circumstantial evidence of possible theft). Despite progress and better asset management, it is still too easy in OPA’s opinion for simple negligence to develop along this continuum given the fragmentation of responsibilities.
- 46. When normal customer-specific data is missing between 2013 and 2019, it is not possible to determine whether it was never created or was intentionally destroyed. OPA is concerned that the ongoing criminal and civil litigation is a productivity-busting quagmire without a clear procedural remedy. Facts and memories are likely to go stale before the wheels of justice for DWP employees and customers grind to a halt.

IV. RECOMMENDATIONS

Activities That Involve Board Interactions with City Council, Labor, and City Controller

- 1. The Board could request, and the City Council could consider, adopting an administrative code provision that requires the DWP to file by July 1 every four years a complete and actionable set of rates that have been Board adopted. These rates must have final, adoptable numbers for each year, schedule, and season proposed. These rates may be subject to a procedure and process for adjustments that cannot be known with sufficient certainty inside a four-year window (e.g., sales, fuel costs, inflation, environmental compliance, regulatory changes, etc.). This is the single, most important action for improving DWP’s governance environment. Implementation will work best if changes to rates are placed in service January 1 or July 1.

2. The Board could request that the City Controller commission a forensic audit of the restitution to identify over or under charges in power, either from the customer care and billing system or the MV-90 system. Large power accounts, and the meters associated with them through a Service Level Agreement, should be reviewed in 5 year increments, from 1995 forward, to determine if large accounts have had meters removed that are still active and communicating but no longer attached to these accounts. The DWP was significantly disrupted in the late 1990's, and had many manual processes suddenly de-staffed. Water meters for these same large account entities should also be checked.
 - a. This work could include a statistical evaluation of small amounts (e.g., under a dollar) applied to many bills, as well as patterns identifiable from bad debt expensed. Rounding errors, choices made for implementing seasonal changes in rates (applied to billing days on a pro rata basis), consistent patterns, or high numbers of adjustments in a narrow band, should be evaluated. It is entirely plausible that a great deal of small but frequently applied adjustments are the source of growth in the cumulative restitution.
 - b. Request OPA assist the City Controller in selecting several different kinds of specialists for this work, and provide advice as needed.
 - c. Consider requesting the State Auditor review the results of this effort for completeness, after the work is substantially completed.
 - d. The complex or special billing in the MV-90 system should have all billing determinants and calculations verified or corrected, if necessary. This foundation will allow DWP to better train and staff the MV-90 system going forward.
 - e. All City and all LAUSD accounts should be checked, even if there are individual premises that, as billed entities, are not "large" by themselves.
 - f. OPA does not know where the smart water meter data, generated by the installation of smart water meters at the Park & Recreation Department, is located within DWP. OPA was once informed several years ago that a vendor houses the data, and no one at DWP has it, which is concerning.
 - i. Without this information, no one could determine the correct cost of service for water for that customer class, assist that Department with optimizing its water use and bills, or verify that the bills are correct.
 - ii. OPA does not know if DWP is in control of the vendor involved.
3. Review and approve, for further action by the City Council, an appropriate separation of duties in the position descriptions for the meter to cash operations, rate design, special

rate negotiations, standard billing, special or complex billing, meter data management, revenue collection, various field operations (e.g., meter setters, field inspectors, meter testers), revenue verification, and revenue security. OPA believes that DWP's public trust will not recover if field collections continue. Therefore, OPA urges the Board to supervise the use of attrition or re-assignment until these types of positions are vacated.

4. Request that the City Council delegate to the Board the adoption of "high peak period," "base period," and "low peak period" to match its power system, in each month, with the same number of hours now designated in rate schedules as "high peak," "base," and "low peak." In other words, shift the definitions of when these hours occur, without making these periods longer or shorter. Fixed costs will therefore be unchanged. Establish an annual process, roughly concurrent with the budget process, by which shifts in these periods (but not the total hours of each period) are moved earlier or later in a day to reflect the prior year's experience for each month.
 - a. DWP's peak period has shifted significantly since the rate ordinance was adopted. California continues to operate in a state of very tight dependable summer generation, and DWP is currently sending price signals to its customers that exacerbate the ability to ramp up enough dependable generation when the sun sets, reducing solar generation. Stale peak designations are lowering prices right on top of the "net" (of solar) peak ramp-up, which often produces the highest wholesale prices in the day. This matter is urgent because power customers need notice of a change before this summer. It can be accomplished with a single sentence amendment to the power rate ordinance, superseding schedule-specific and stale period definitions.
 - b. DWP's out-dated price signal is an urgent situation. DWP's reliability in power delivery depends on the regional grid, the systems in California around DWP, the provision of mutual aid under stress, and a large amount of imported power.
5. The Board could request the City Controller establish a public process for reviewing water or power bills that City Departments wish to contest. The Board could ensure that the DWP staff involved in rate design, special or complex billing, or meter management, are appropriately shielded from direct communications with these (and any) customers.
6. The Board could request of the City Council as many Civil Service exemptions as are necessary for the Energy Control Center, IT Department, and Customer Service Division to hire specialists in the utility sector. One hundred exemptions would be a good starting point, to be added or subtracted. Many other types of credentialed work also need these exemptions, like air quality controllers, environmental toxin handlers, or compliance specialists.
7. Oversight of system audit controls could be better monitored. DWP could annually report to the City Controller on periods of time during which full audit functions of the

billing systems are not operating. DWP could develop with that office specifications that define the scope of these functional outages.

8. A union representative in a non-voting position on the Board of Water and Power could be present. There currently is not enough candid discussion about how to honor labor agreements, evaluate trade-offs, and proceed with priorities, a matter exacerbated by chronic under-staffing.
9. The Board could adopt a Board policy specifying the number of years before rotation of the DWP auditor is required, and request that the City Controller provide a new, written procedure to solicit on behalf of the DWP should the DWP find no responsive or responsible bidders are available to it following its own solicitation.
10. Request the City Council review and comment upon the reporting structure for the proposed DWP Inspector General, if there is to be one. Given the attempts to undermine an independent office that OPA has experienced, OPA is concerned that the confidentiality that attends an Inspector General's "work in progress" may reduce actionable recommendations that are timely to the City Council. As this billing system litigation demonstrates, factual inquiries can go on for more than a term of elected office.
11. OPA believes that DWP is constrained from hiring and contracting with sufficient speed to meet its own priorities, as well as public expectations for service quality and reliability. OPA suggests as one method of accelerating needed assistance, that a quarterly review process be initiated with the City Council at any point in time that occupied positions are more than a set threshold below the Board adopted Annual Budget's Annual Personnel Resolution (APR) or funded occupancy. The APR ensures redundancy of staff so that attrition and continuity of service are rendered compatible in both good and bad economic conditions. The funded occupancy describes labor costs in the rates.
 - a. DWP has the same crews performing three kinds of work for both power and water: replacement of aged facilities, construction for new customers, and continuity of service operations for existing customers.
 - b. If occupancy drops very much below funded occupancy, DWP could be making actionable recommendations to the City Council to achieve the plans it put forward in the last rate case, prepare for the Olympics, modernize its own operation, and decentralize its workforce while its main building is renovated. Further delay is harmful.
 - c. DWP has many simple and important recommendations to offer. For example, making offers of employment to graduates of linemen schools, as is allowed for engineering schools.

- d. The City Council could consider instituting a two week time limit for Section 1022 procedures at DWP, perhaps in conjunction with some mechanism that ensures funded occupancy is attained, or deviations from APR are limited, in a framework of five years at a time.
- e. The City Council could establish incentives that bring APR and actual occupancy closer together, so that DWP can begin to operate with more stability.

Supervision of Meter-to-Cash Functionality in the Reconstituted Customer Service Division (CSD)

OPA assumes that the CSD will begin to formulate a plan and set business priorities now that the billing system upgrade from 2021 is completed. This plan will include many delayed and deferred actions that need to be implemented in a cohesive, resourced, and staged manner, relative to the next CCB upgrade. Items in this section are those that the Board can ensure are included in those plans and discussed at the Board regularly.

- 12. Forgiveness of arrears for residential or small commercial accounts. Bills for periods longer than 6 months, for consumption that pre-dates June 30, 2018, that are still actively contested in any form or forum, should be granted amnesty from payment beyond a 6 month backbill.
 - a. The maximum backbill after June 30, 2018, should be determined by Rule 17B and 17C, which describes a maximum of 3 years (17B) or 4 years (17C) “in **any** event” [emphasis added].
 - i. There are no events, alleged or otherwise, after June 30, 2018 wherein the DWP’s failure to issue a bill (Rule 17D) should lead to longer backbill periods for residential or small commercial customers.
 - ii. These customers reasonably expect DWP to issue bills within three or four years, if not much sooner. These customers should not be subjected to longer bills under cover of allegations that cannot be fairly resolved at reasonable cost due to the passage of time.
 - b. The class action settlement and 2021 stipulation provisions for Rule 17D exceptions, affecting six month backbilling limits, would become unnecessary under this amnesty.
 - c. OPA has one pending complaint with the CRO meeting this description. This complaint informs OPA’s opinion that atypical procedures and practices occurred due to unexplainable manipulation of systems and procedures. For a variety of reasons, customers did not always receive written notice that DWP desired to access the meter, have a timely appointment made when they

requested a meter be evaluated, or obtain meter tests at or above reasonable, written standards.

13. Supervise the development of better policies, procedures, and practices for de-energizing an interconnection, turning off, or removing commercial meters that are not billed. Staff this function and supervise the measured staffing and implementation of these plans.
14. Delegate to the acting Assistant General Manager of Customer Service the authority needed to proceed with hiring funded positions, without any further managerial approvals within DWP.
 - a. OPA also recommends a similar delegation of hiring authority to the Assistant Director of Energy Control and Grid Reliability. That individual needs to *immediately* proceed with hiring funded positions, without any further managerial approvals within DWP.
15. Restore to Customer Service Division the highest budget for its Organization Code (19000) that was authorized and approved in the rate budgets from 2016 to 2020. At a minimum this would be O&M funding during the rate review period of 2016 to 2020 for Functional Items 4070100 thru 4070480 (the Customer Service Business Unit), which ranged from \$179 million per year (2015-2016) to \$189 million per year (2019-2020). Capital expenses planned would add to that amount. DWP proposed these amounts so it could “put the customer first.”
16. Restore the Customer Relations Officer to historical functions, and supervise the delegation of reasonable discretion and adjustment of bills wherein DWP cannot reasonably expect to defend the meter and bill. This function requires a thoughtful application of filtering of complaints, managerial support of judgment calls involved, correct staffing, and titrated supervision (e.g., by dollar amounts). Specifically, OPA has suggested that more discretion be triggered when 3 or more errors of execution are found in the residential meter-to-cash functions within DWP, and the residential customer has no history of repeatedly questioning metered amounts. This is a highly expert team of seasoned individuals that provide an important feedback loop to the entire chain of activities. In order to protect this function, set up reasonable procedures for referrals to the CRO arising from elected offices, and re-evaluate procedures for customers that become abusive.
17. Establish a clear procedure by which a customer billed master meter and sub-meters can ask the DWP to verify and show them that billed sub-metered amounts are subtracted from billed master meter amounts.
18. Request a summary report from the Jones class action settlement claims appeal Special Master (Barkovich & Yap) covering claims appealed, systemic issues identified, the total

accounts, corrected accounts, and corrected amounts, by scale (e.g., 60 accounts adjusted under a dollar), and request any advice pertinent to DWP's rates and billing going forward.

19. Standardize a hierarchy of data that is used to fill in gaps and correct errors in the MV-90 system. Establish written standards to supervise and oversee this data cleaning function. Ensure that duties and descriptions and responsibilities exclude any role in billing, rate design, bill disputes, or non-standard negotiations over customized agreements.
20. The Board could inquire as to the best location in DWP for monitoring meter data for power theft, and any other aberrant meter data that should lead DWP to initiate action in response. This function may report under a new Customer Service Director of Meter Integration and Coordination (discussed below) or be elsewhere inside Customer Service.
21. Supervise the establishment of policies, procedures and practices by which collection activities are improved, ensuring that discussions with customers about collection occur on recorded phone lines or in customer service centers, where they are documented.
22. Supervise the establishment of policies, procedures, and practices that support and strengthen field customer service activities, and remove billing and collection from those roles. Re-establish breadth training and institutionalize it. Supervise the provision of tools for appointments to be made in advance of the day of a premise visit. Supervise the development of a career ladder for this staff that allows for promotion and increasing responsibilities without field collections.

Metering

23. The Board could direct the DWP pursue, and request the Civil Service Commission and City Council to assist, with the establishment of a power Director of Meter Engineering reporting directly to the Senior Assistant General Manager over Power Construction, Maintenance & Operations. This individual would oversee new business deployment of meters, replacement of old meters, and meter testing.
 - a. This Director would be a peer position to Power Construction & Maintenance, Power Supply Operations, Power Transmission & Distribution, Power System, and Power Fleet & Aviation.
 - b. This individual would be responsible for all issues of quality assurance associated with meters, purchasing meters, software functionality that reports

tampering of meters, compliance with vendor specifications, both physical and the software compatibility, and software version controls.

- c. This individual would have the Power meter lab reporting to directly to them.
 - d. DWP needs to increase its capacity for testing and software integration issues associated with power meters. When this individual “signs off” or certifies a meter, it is “good to go” from the perspective of all other Directors with meter components in their projects.
 - e. All these duties are the “front end” of meter deployment.
24. In tandem with this new position, the Board could direct the DWP to pursue, and request the Civil Service Commission and City Council to assist, with the establishment of a new power Director of Meter Integration and Coordination, reporting directly to the Senior Assistant General Manager for Customer Service, and a partner to the Power Division Director of Metering at the “front end.”
- a. This individual would be responsible for all power meter inventory control, asset management over the life of the meter, logistics coordination with field scheduling of meter installations (both bulk jobs and single meters), and terrain obstacles to meter communications.
 - b. This individual would have the ability to confirm all meter communications are working correctly and integrating with all of DWP’s operating systems before staff exit an installation site.
 - c. This individual should be, within staff, tracking all back end meter operations and data flaws, analyzing meter generated tampering messaging, tracking the number of customer service requests involving meter inspections and testing, analyzing data suggestive of certain types of meter failure profiles, identifying software or communications compatibility issues to remediate.
 - d. This individual should have staff that publishes results of this work that will inform Power Construction & Operations, and customer service training, both in the field and on the phone.
 - e. All these duties are the “back end” of meter deployment.
 - f. In OPA’s opinion, DWP would benefit from higher proximity of this engineering function to customer service operations.
25. These new Directors could be encouraged to develop a staffing plan that will raise significantly the fundamental level of meter and revenue security. Both of these

Directors could work closely with a meter expert in the IT Department's Program Management Office who integrates systems, as well as with Human Resources to ensure that staff positions are complementary, and not duplicative.

26. Supervise the establishment of policies, procedures, and practices that are able to consistently inform the customer of their rights to have their meters tested, with appropriate distinctions for water and power meters. Ensure all meter tests meet or exceed state meter testing standards, as discussed further below. Consider leaving a standardized written instruction after a high bill field investigation, that documents the customer's right to seek a meter test, or take other actions, if the bills continue to be questioned.
27. Consider asking DWP to establish an appropriate fee for residential and small commercial customers that, despite a meter test showing accuracy, simply wish to have a newer meter for their peace of mind and for a cost-based charge.
28. For both power and water meter inventory systems, continue to improve meter inventory systems for the end to end life of each meter.
29. Establish a clear and timely protocol when meters and data are moved from one meter data management system to another.
30. Meter testing for customer requests: formalize power meter testing standards equal to or better than the state regulated standard in EPO-39, when sought by a customer. Standards lower than EPO-39 are not reasonable, in OPA's opinion. Adopt a written testing procedure with version controls, and make changes only in writing and as authorized by a Senior Assistant General Manager in the Power Division. Train on changes in meter testing procedures, and separate adoption dates from implementation dates. Systematically address all pending complaints that may be affected by changes in meter testing standards.

Budget Actions Supportive of Better Board Supervision

As of November 30, 2021, the DWP's wages and salaries labor budget is expected at year end to be approximately \$200M under-spent, or lower by 8.2%.

31. Require of DWP, roughly concurrent with its preliminary budget, a staffing allocation to each organizational unit in the department, in dollars and in persons. Consider establishing a framework by which the Board can supervise effectively the execution of the staffing plan, as represented by the final budget. Leaving an 8% margin in budgeted labor dollars (the size of the City transfer) or an occupancy margin of 18% (the size of overhead allocations allowed by some federal grants) is not reasonable for a utility of this size.

32. If DWP hires from inside the City at a base wage of over \$120,000, the Board should consider adopting a higher standard of specialization, both for credentialed and uncredentialed work. OPA has previously suggested 10 years of utility experience, but there are many additional under-paid specialty areas within DWP that cannot reasonably be filled with general management skills.
33. Institute a uniform calculation of overtime by organization code, using only “regular” hours actually worked at regular rates and times in the denominator, and all overtime (or similar hours with a multiplier of any kind) in the numerator. This excludes items like vacation, other permitted absences, and sick time.
34. Develop a DWP-wide heat map using a uniform overtime metric to inform the Board’s view of delegated and centralized hiring activity, and whether it is aligned with the annual budget, rates, and priorities.
35. Require DWP publish, roughly concurrent with its preliminary budget, a City consolidated super-bill that provides the actual dollar amounts billed, the kwh, kw, and hcf consumption billed, and the account identifiers for all City departments, whether or not paid with General Funds, on the fiscal year just audited.
36. Require DWP publish, roughly concurrent with its preliminary budget, a City super-bill that provides the estimated O&M and capital DWP will pay each City Department for services rendered to DWP, and include as an attachment a single master list of all agreements (memorandum of understandings, agreements, letters of intent, or similar methods) that authorize these payments.
37. Require reasonable power load estimates when setting rates and annual budgets, which will not exceed the last, highest known amount of retail sales in a recent audited year, until such time as those sales are positive two audit years in a row. Rooftop solar is now accelerating, and DWP’s rates are now high enough that many cost-effective energy efficiency and solar purchases will occur without rebates or other inducements.

Ratemaking Related Activities the Board Can Act Upon

38. Sequester all measured consumption units (e.g., kwh and hcf) from irregular unbilled meters, so that the loads associated with these premises are no longer recovering revenue automatically from decoupling. Irregular unbilled meters are not connected to an active account or associated with a service level agreement.
39. Direct the General Manager to establish a Steering Committee with a representative from Customer Service (generally), the custodian of the power meter data, Billing (in particular), the IT Program Management Office, and IT representative for CCB, Power

Engineering, Power meter engineering, a person from FSO's revenue verification role, a person from FSO's rates management, and OPA, to develop a conceptual power rate design proposal that will be Board supported before it is handed to the Power Division to develop into detailed specifications.

- a. The DWP needs to restore its ability to collaborate on power rates, their design, and the goals all these functions must ultimately execute together.
- b. FSO should Chair the Steering Committee, not the Power Division, and present the outcome to the Board. FSO has primary responsibility for revenue stability and security, and therefore would be the appropriate leader in gaining Board assent before detailed plans are generated for any rate design.
- c. Consider introducing Board-approved rate design to the City Council, before detailed execution begins, so that concerns and requests are formulated earlier in the rate process.
- d. The power rate design should include demand response programs or schedules.

V. CONCLUSIONS

The OPA's role is to offer advice, and never to make the decisions.

The Board could request, and the City Council could consider, adopting a point in time by month and by year to reassess progress, so that any additional decisions needed for structural changes to DWP governance do not fade off the City Council's calendar.

OPA anticipates that a significant improvement in governance would result from asking voters to authorize the creation of a municipal utility district for water and power, separate from City government. While it is feasible to act on the recommendations above, if these actions cannot be accomplished after being actually staffed and funded, a municipal district could be pursued, for power, water, or other utilities.

cc: The Honorable Eric Garcetti, Mayor
The Honorable Ron Galperin, Controller
The Honorable Mike Feuer, City Attorney
Martin L. Adams, General Manager & Chief Engineer, Department of Water and Power