city of

BEVERLY HILLS

PUBLIC WORKS SERVICES

WATER UTILITY STAFFING STUDY

Final Report / May 12, 2014

RAFTELIS
FINANCIAL CONSULTANTS, INC.

Contents

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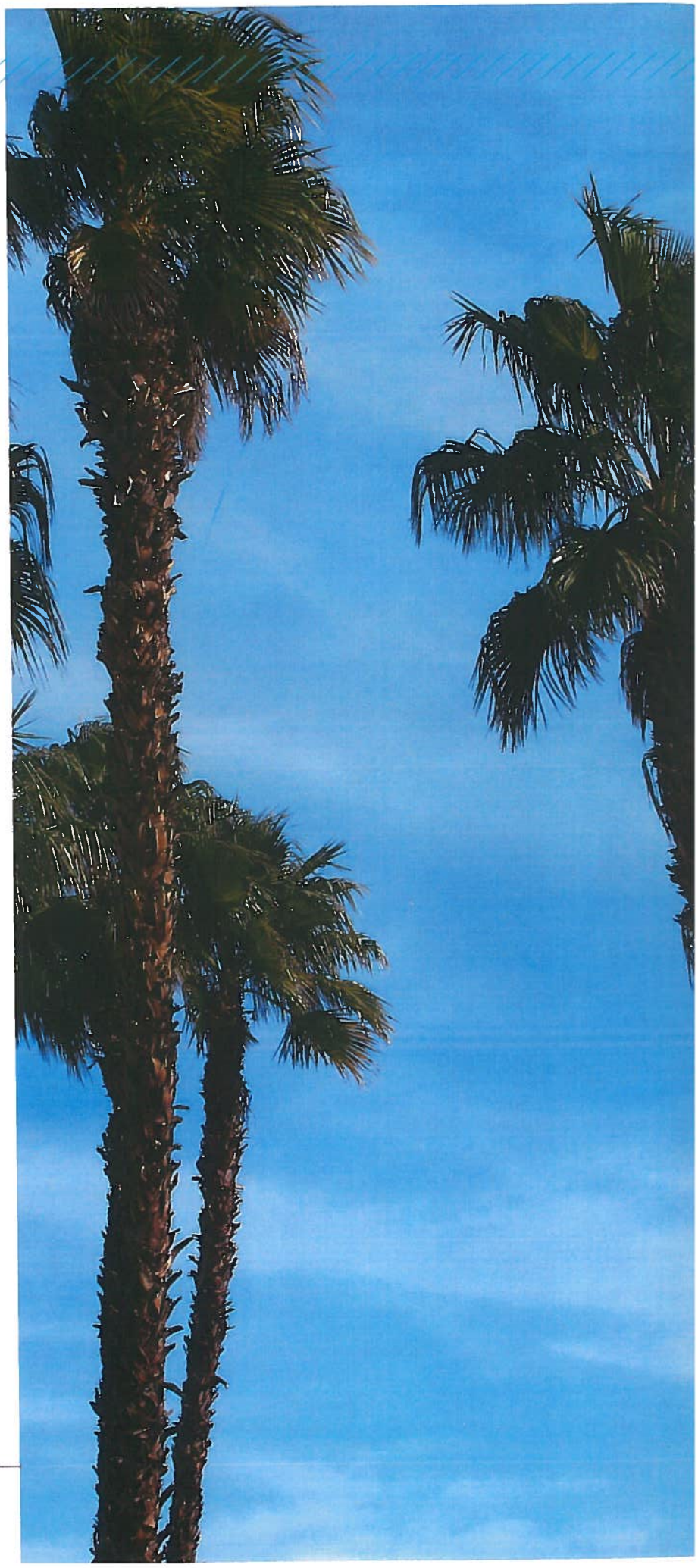


EXECUTIVE SUMMARY

The City of Beverly Hills Public Works Services' Water Utility (Utility) is committed to ensuring that it provides high-value drinking water services to more than 11,000 service connections within Beverly Hills and portions of West Hollywood.

Doing so requires that the utility organization be staffed and managed to ensure maximum effectiveness and efficiency of its staff resources and business processes. The Utility is currently updating its Water Business Plan (WBP). One of the components of the WBP is the completion of a staffing analysis by an external entity to validate the current staffing levels of the Utility to meet both present and future service level needs and regulatory-driven standards.

The Utility operates four groundwater wells and a T4-certified Reverse Osmosis water treatment plant that produces approximately 10% of its retail demand. The remainder of the water is purchased from the Metropolitan Water District. In addition to maintaining a distribution system of approximately 171 miles, the Utility manages and operates 10 reservoirs throughout thirteen pressure zones. The Utility also provides 791 Fire Service connections. The Utility consists of a staff of 26.15 Full Time Equivalent (FTE) budgeted positions.

The Utility staff are able to provide exceptional service to customers within its service area. Service level expectations are high, and we note that the Utility's staff get very high marks for responsiveness to the City's water customers. The Utility's staff are to be commended for their focus and dedication to their responsibilities. Their challenges are significant, made all the more difficult by operating with a small workforce that serve a "24x7 / 365 day" function.

The labor demands of the service area force the Utility to use extensive amounts of overtime in order to meet its service-level requirements.

In order to objectively examine staffing requirements needed to meet the service levels and maintenance responsibilities of the Utility, Raftelis Financial Consultants, Inc. (RFC) was retained to conduct an assessment of staffing and work practices to ensure ongoing operational performance and efficiency. This document presents the findings of the staffing study.

The objectives of the study were to:

1. **Review the operations and staffing of the water supply, treatment and distribution operation**

2. **Assess practices and policies for workforce staffing, assignments, and management**

3. **Assess key performance metrics, including overtime and other indicators to meet desired levels of service**

4. **Assess the impacts of required Department of Public Health regulatory-driven staffing requirements for the Water Treatment Plant and distribution system operation and maintenance**

5. **Conduct an external metric benchmarking assessment of selected cities to compare staffing allocation using Full-Time Equivalents (FTEs) as the primary comparer**

"People are the most important resource a utility has and are what make it successful. They are the front line in protecting public health and the well-being of the environment. The real heroes are those who must work at all hours of the day and night, on weekends and holidays, in the streets and neighborhoods, under a variety of generally-difficult conditions, working below-grade and in traffic, and who also must continually act as the Utility's ambassadors to the public and customers."

STUDY APPROACH

RFC's approach to this assessment involved four phases as presented below:

1. **ENGAGE** the organization to understand the organizational structure, culture, and employee and stakeholder perceptions of the Utility.

2. **ASSESS** operating procedures, roles and responsibilities, coordination and collaboration, policies, technology, and processes used to meet the expanding requirements of the Utility's business.

3. **COMPARE** the Utility with other similar organizations on staffing considerations and practices.

4. **ENHANCE** the Utility's staffing and resource utilization to maximize effectiveness and efficiency of resources.

SUMMARY OF
FINDINGS

The Utility is blessed with excellent leadership and an extremely dedicated workforce that regularly goes above and beyond the call of duty to attempt to keep up with workload demands. The culture of the Utility is very focused on customer service and the provision of high-quality water services. As regulatory and other requirements have increased, coupled with an aging infrastructure, the Utility struggles to achieve a proactive mode of operation. It must rely on extensive use of overtime to attempt to keep up with basic workload requirements. The Utility is effectively stuck in a reactive mode of operation. However, significant opportunities exist for elevating the Utility's effectiveness by adding staff resources, enhancing business processes and use of external resources to help it meet industry standards of care for infrastructure asset management and regulatory compliance requirements.

SUMMARY OF RECOMMENDATIONS

While the Utility has generally been able to meet customer service expectations and respond to service calls and requests in a timely manner, it has done so without the ability of existing staff resources to meet the needs of longer-term asset management activities which serve to lengthen the reliability and life of water infrastructure assets.

To help meet ongoing customer service demands and attempt to implement minimum longer-term proactive maintenance approaches, the Utility has relied on the use of overtime at rates that are well above industry norms as a standard operational strategy. This report contains a number of recommendations that the Utility could implement to enhance the organization to provide better service and elevate efficiencies. These recommendations are discussed in detail in the remaining sections of this report. However, the following page provides a summary of recommendations being made.

RFC estimates that the Utility needs an additional 10.3 Full-Time Equivalent (FTE) positions in order to bring its staffing more in alignment with the requirements of the Utility's mission and service-level mandates. The benefits of additional resources include shifting to a proactive mode of operation, significantly reducing overtime expenditures, increasing depth-of-bench and cross-training of staff resources, reducing errors in judgment, promoting use of safe working practices, and providing enhanced service to the City's utility customers.

PLANT AND WATER SYSTEM OPERATIONS

The Utility should increase its "plant and pumper" operations staff by 5.0 FTEs by funding and filling the requested 5.0 FTE's additional Water Worker III positions tc cover the DPH regulatory requirement for full-time coverag at the Treatment Plant. In addition, the Utility should fill the funded but vacant Water Systems Worker III position.

WATER SYSTEMS MAINTENANCE

The Utility should increase its Field Operations staff by 3.0 FTEs by funding and filling one Water System Worker II position (1.0 FTE) and funding and filling two Water System Worker I positions (2.0 FTEs).

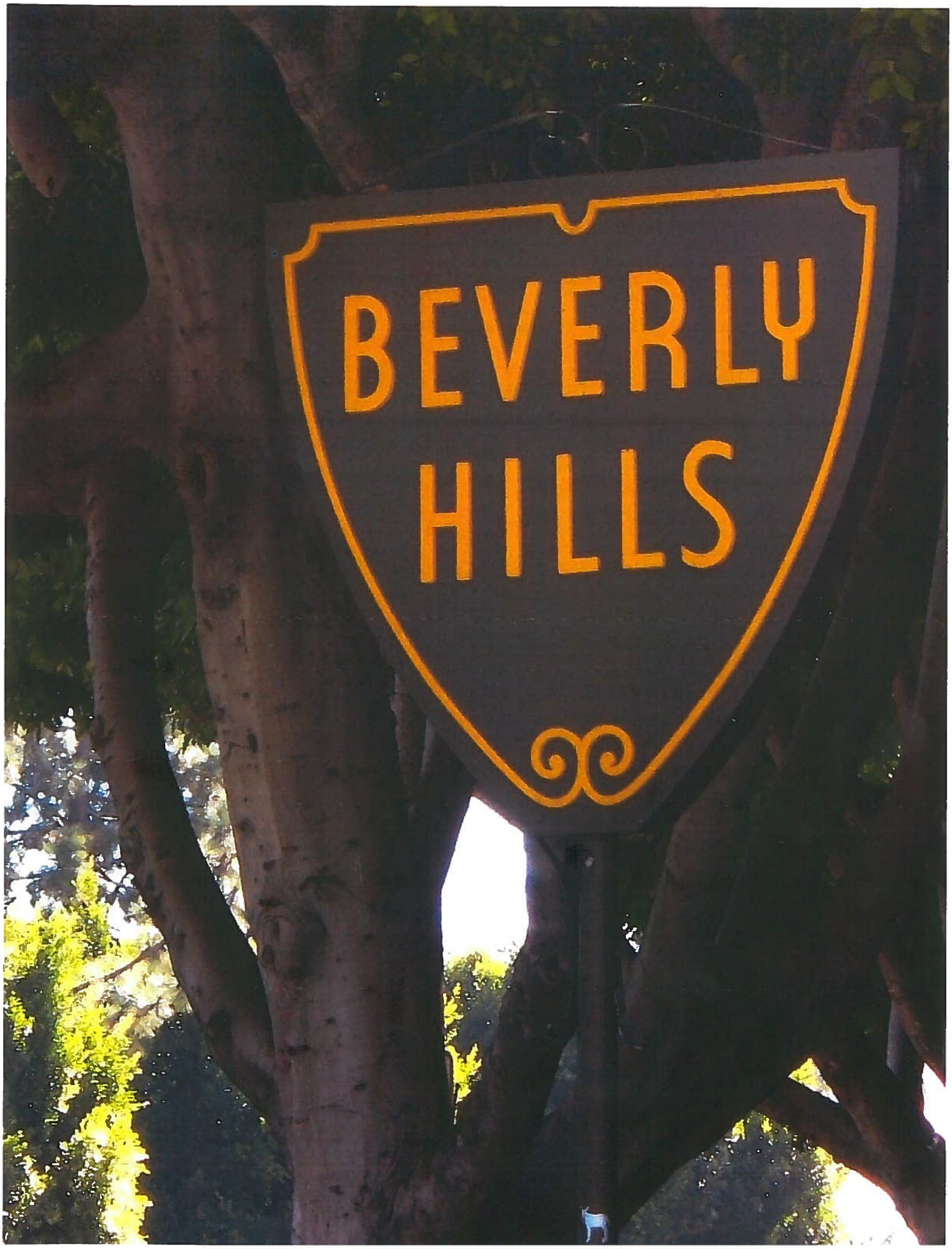
COMPLIANCE MONITORING AND TECHNICAI ADMINISTRATIVE MANAGEMENT

The Utility should fill the Water Systems Inspector position and fund and fill the proposed Technical Administrative Ana lyst position (1.0 FTE).

MECHANICAL AND ELECTRICAL MAINTENANCE

The Utility should fund and fill the Equipment Mechanic II pos tion (1.0 FTE) and fund the part-time electrician (0.3 FTE).

The benefits of additional resources include shifi ing to a proactive mode of operation, significant reducing overtime expenditures, increasing depth-of-bench and cross-training of staff resources, reducing errors in judgment, promotinc use of safe working practices, and providing bet ter service to the City's service area.


BEVERLY
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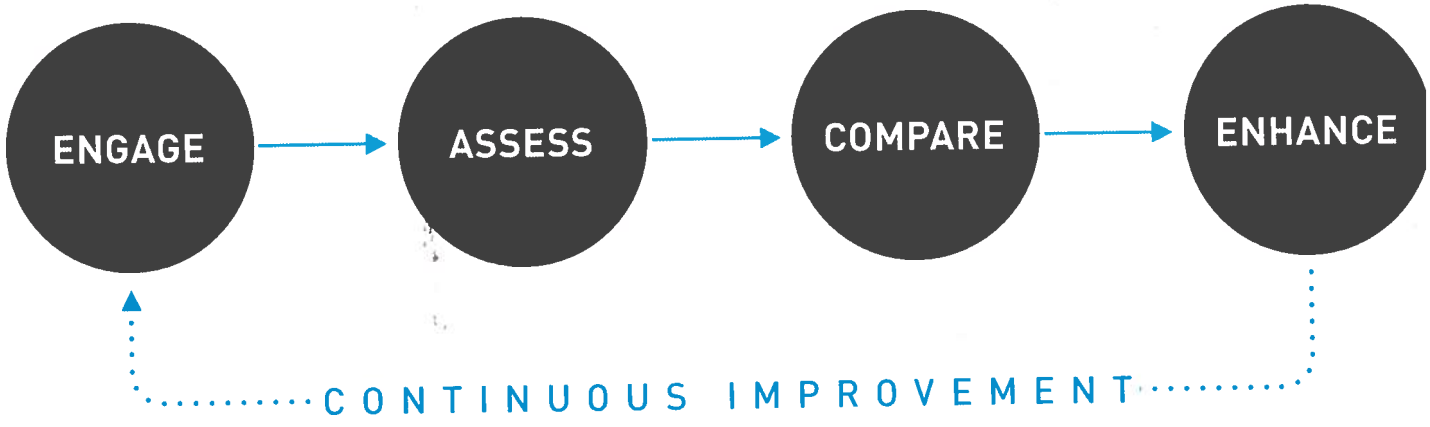
PROJECT APPROACH

RFC uses a methodology for organizational assessments which involves four key phases, as presented in the diagram below.



1 Engage

KICK-OFF ACTIVITIES

RFC conducted project kick-off activities that included:

- Meeting with the Utility Leadership Team (comprised of the Assistant Director of Infrastructure and Field Operations, Water Operations Manager, Field Supervisor, and the Water System Production/Operations Supervisor).
- Reviewing Utility-provided documentation with the Utility Leadership Team.
- Tours of Utility facilities and work areas to understand the logistics, span of work and nature of the service area.

INTERVIEWS WITH INDIVIDUALS AND THE LEADERSHIP TEAM

Follow-up interviews with each member of the Utility Leadership Team were conducted to enable the project team to:

- Understand each individual's perspective on the Utility's performance in general and discuss the goals, specific issues, staffing practices and work performed within each of their respective areas of responsibility.
- Identify other issues that impact the operations of the Utility and its ability to meet the staffing requirements of intended asset condition maintenance programs.
- Clarify findings and conduct validation reviews with the Utility Leadership Team and the Director of Public Works.

2 Assess

THE CURRENT STAFFING STATUS

The Utility is currently staffed by 26.15 Full Time Equivalents (FTE's) overseeing the following:

- Operation and maintenance of four groundwater wells and a T-4 Certified Reverse Osmosis water treatment plant.
- Operation and maintenance of a distribution system that is approximately 171 miles in length and contains 13 pressure zones.
- Operation and maintenance of 10 water reservoirs.

The position descriptions and their presently budgeted Full-Time Equivalents (FTE's) are presented in Exhibit 2.1 and in the current Utility organizational chart (Exhibit 2.2).

Exhibit 2.1: *Position Descriptions and Full-Time Equivalents*

POSITION DESCRIPTIONS	BUDGETED FTE FY 2013/14
ASSISTANT DIRECTOR OF INFRASTRUCTURE AND FIELD OPERATIONS	0.40
WATER OPERATIONS MANAGER	1.00
WATER SYSTEMS PRODUCTION / OPERATIONS SUPERVISOR	1.85
WATER QUALITY SPECIALIST	0.80
ENVIRONMENTAL PROGRAM INSPECTOR	0.10
WATER SYSTEM INSPECTOR	1.00
SENIOR WATER SYSTEM WORKER	3.00
WATER SYSTEM WORKER III	5.00
WATER SYSTEM WORKER II	8.00
WATER SYSTEM WORKER I	3.00
WATER SYSTEM TECHNICIAN	1.00
FIELD SERVICE REPRESENTATIVE	1.00
TOTAL FULL-TIME POSITIONS	26.15

UTILITY STAFFING

BUDGETED / FISCAL YEAR

2009/10
24.59

2010/11
25.18

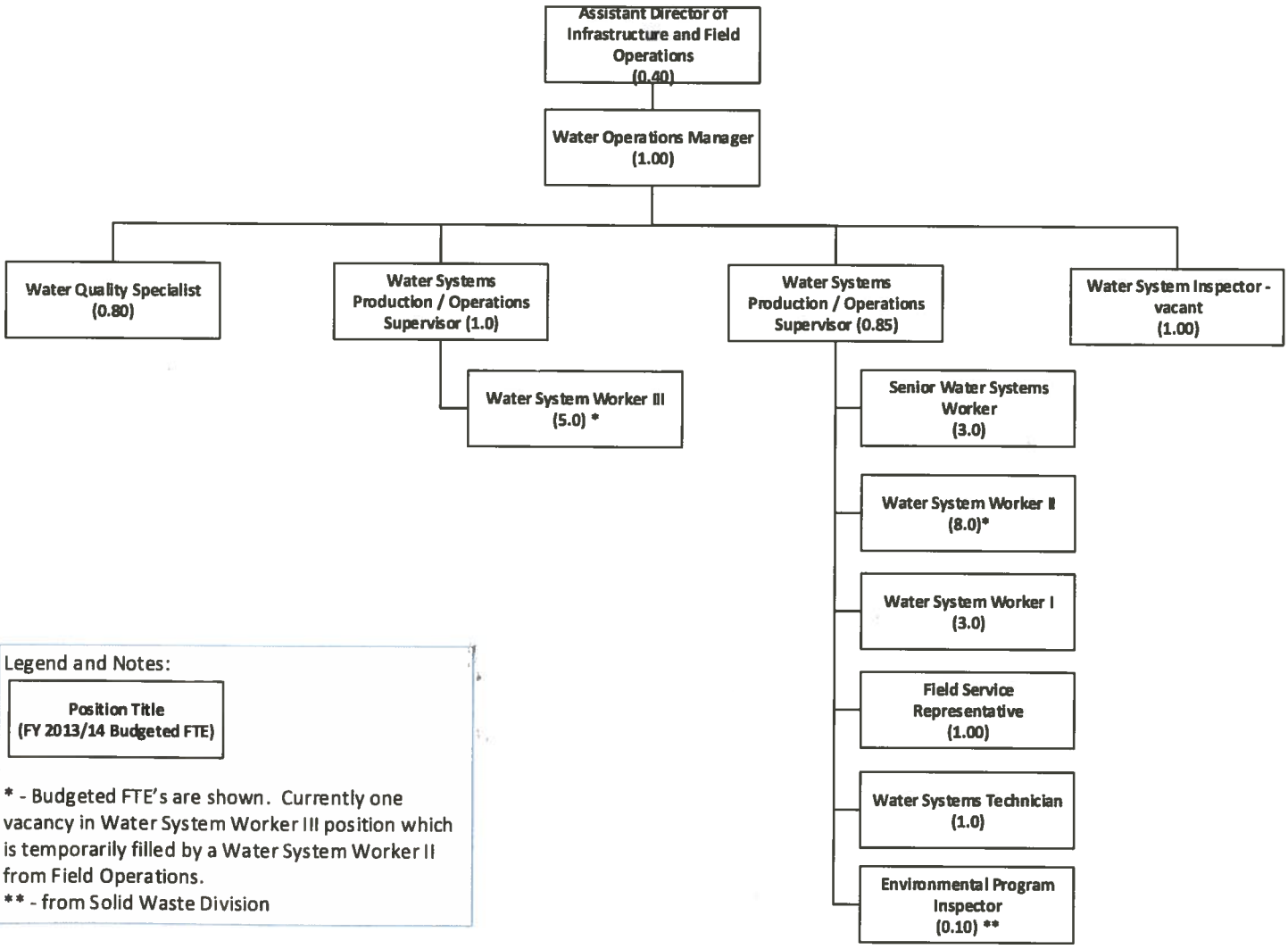
2011/12
25.08

2012/13
25.85

2013/14
26.15

Note that the Utility recently has submitted to the City a request for five additional Water System Worker III positions. This is the direct result of a recent order by the California Department of Public Health against the City to follow the regulatory mandate for qualified staffing at the Water Treatment Facility 24x7. The Utility is presently responding to this mandate by reassignment of Water System Workers from the Water Distribution group. This is not a sustainable solution, since certification requirements will not be met by the reassigned employees. These five additional positions must be filled by the City with certified employees to be compliant with these mandatory State requirements.

Exhibit 2.2: *Organizational Chart*



USE OF OVERTIME AS A STAFFING SUPPLEMENT

RFC conducted an assessment of the use of overtime by the Utility to determine the net actual labor requirements expended to keep the system operating and provide high levels of service to the Utility's service area. The evaluation period included four calendar years plus the first two pay periods of 2014.

A key finding is that actual labor expenditures and overtime usage do not reflect attainment of objectives and goals intended by the Utility to meet best-practice operational requirements. Best practice is to achieve full implementation of programs and activities that maintain and protect the City's investment in Water System assets in accordance with standard water industry practices. Thus, despite the high usage of overtime, many of the Utility's best practice goals and objectives have not been met primarily due to the following factors:

- Insufficient workforce numbers to meet the basic labor requirements of day-to-day operations which results in a near continuous "fire-fighting" mode of operation.
- Policies and other criteria that govern how staff and contracted resources may be utilized by the Utility.

ASSESSMENT RESULTS

- Overtime has been used extensively by the Utility for a variety of activities. Industry best practices support the use of overtime as a management tool to be applied for generally non-typical events and situations (e.g., emergency and scheduled off-hour repairs, shift relief and other non-routine requirements). The challenge tha the Utility faces is that it must use overtime as a means to meet ongoing operations requirements in a reactive, "fire-fighting" mode at labor rates that are well above typical industry practices. In this regard, the Utility use overtime primarily to compensate for limited staff size and "depth-of-bench."
- Depending upon an employee's skill level and role, they are called upon by the Utility to work overtime, sometimes in extreme amounts. Examples of this include pumper roles and plant operator roles where shift work and regulatory requirements demand on-site resources 24x7, 365 days/year. As indicated in Exhibit 2.3, there are pay periods in which a single employee worked in excess of 70 hours per week and reportedly occured dur ing times when positions were vacated or other factors occurred (e.g. vacation, light-duty, sick, etc.). There is no "float" of qualified resources to provide relief during these events.

Exhibits 2.3 and 2.4 present the use of overtime for the last four calendar years. Exhibit 2.3 also includes the overtime expended during the first two periods of 2014. Based on the overtime expended during these two pay periods, the projected overtime consumption for 2014 is on track to significantly exceed the expenditures for previous years.

Exhibit 2.3: *Summary of Total Overtime Expended (Calendar Years)*

	2010	2011	2012	2013	2014 [1,7]
TOTAL ANNUAL OT (HRS) [2]	6,099	4,176	6,028	6,793	9,854
AVG. IMPACTED FTES / PERIOD [3]	11.0	9.8	13.0	13.9	16.0
OT / PERIOD / IMPACTED FTE (HRS) [4]	20.5	16.6	17.6	18.7	23.6
OT AS % OF PERIOD [5]	25.7%	20.8%	22.0%	23.4%	29.5%
AVG FTE OT EQUIVALENTS / PERIOD [6]	2.9	2.0	2.9	3.3	4.7

Notes

1 FY 2014 figures are for two pay periods - 1/11-1/24/14 and 1/25-2/7/14

2 OT = Overtime

3 FTE = Full-time Equivalents

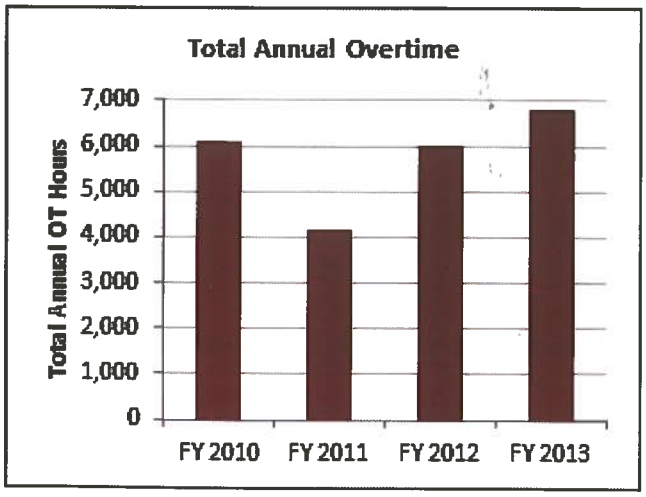
4 Refers to the number of OT hours per FTE incurring OT in a pay period

5 Refers to OT as a percentage of a 40-hour workweek

6 Refers to the average number of equivalent FTEs based on OT incurred

7 Straight-line extrapolation total for 2014 is 9,854 hours (758X 13 bi-weekly pay periods).

Exhibit 2.4: *Total Annual Overtime Expended and Individual Impact of OT Hours*



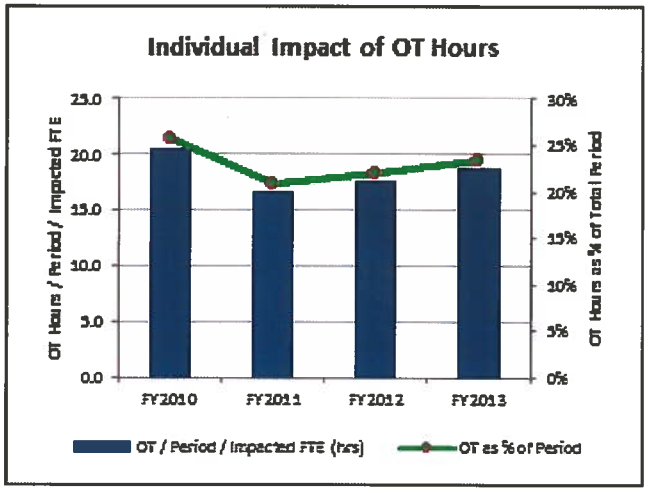


Exhibit 2.5 presents an expenditure by individual employee for the previous four fiscal years. Analysis of the overtime rates presented in Exhibits 2.2, 2.3, 2.4, and 2.5 suggest the following:

- **The total annual overtime expended by the utility is extremely high for the industry.** It is rare to observe such sustained amounts of overtime usage in RFC's experience.
- **Total Overtime Expenditures are generally attributed to a subset of the Utility organization, primarily plant operations, pumpers and water distribution maintenance staff.** Generally around 10-20 staff out of the workforce charge overtime per individual pay period. Thus, the type of work governs which staff members work overtime. This supports the discussion observed for plant operator and pumper roles described above.
- **The impacts of light-duty and other health-related items greatly affect the utility and contribute to use of overtime.** The scope of this study did not provide for quantifying the intangible effects of long work hours in a physically demanding work environment on individuals' health and safety, but it is reasonable to expect a correlation. Thus, an unintended consequence of working long hours in a physically-demanding environment may be injury resulting in time-off or assignment to light duty activities. While not quantified, the potential for such work related injuries greatly increases with sustained use of overtime. This poses a risk not only to the individual but to the operations and financial health of the Utility. Increasing the number of workforce will serve to reduce these risks and resultant impacts on the Utility.

Exhibit 2.5: Summary of Overtime Expenditures by Employee

	EMPLOYEE TOTAL ANNUAL OT				EMPLOYEE AVERAGE OT / WEEK				EMPLOYEE MAX OT / WEEK			
	2010	2011	2012	2013	2010	2011	2012	2013	2010	2011	2012	2013
EMPLOYEE 1	-	17	-	8	-	3	-	4	-	3	-	4
EMPLOYEE 2	65	60	63	108	4	3	3	4	8	5	8	9
EMPLOYEE 3	306	250	318	290	9	8	10	10	17	18	27	23
EMPLOYEE 4	658	203	348	591	13	9	9	12	38	33	17	32
EMPLOYEE 5	91	94	170	63	2	4	6	4	4	22	18	9
EMPLOYEE 6	494	140	323	491	13	4	10	11	40	11	40	37
EMPLOYEE 7	-	53	238	271	-	4	7	6	-	9	19	26
EMPLOYEE 8	307	239	521	435	9	6	13	10	17	26	44	18
EMPLOYEE 9	615	301	411	658	15	8	11	16	40	19	34	41
EMPLOYEE 10	278	178	343	446	9	6	8	11	27	11	22	30
EMPLOYEE 11	71	94	261	174	4	6	7	7	11	15	19	14
EMPLOYEE 12	-	25	75	100	-	3	5	6	-	4	14	14
EMPLOYEE 13	427	482	525	455	11	10	11	12	44	29	41	22
EMPLOYEE 14	328	383	292	469	14	10	9	10	42	31	17	34
EMPLOYEE 15	-	17	-	50	-	3	-	8	-	3	-	11
EMPLOYEE 16	82	99	28	19	7	4	4	3	11	8	7	5
EMPLOYEE 17	505	458	202	21	11	10	7	3	32	26	13	6
EMPLOYEE 18	527	390	277	87	15	10	7	4	43	35	39	12
EMPLOYEE 19	124	176	406	294	5	2	3	4	5	3	3	4
EMPLOYEE 20	265	331	460	512	9	8	12	14	29	47	57	46
EMPLOYEE 21	133	67	117	100	7	7	6	5	19	20	11	15
EMPLOYEE 22	-	27	-	8	-	3	-	4	-	5	-	4
EMPLOYEE 23	269	-	-	8	11	-	-	4	25	-	-	4
EMPLOYEE 24	78	-	-	8	10	-	-	4	19	-	-	4
EMPLOYEE 25	450	17	7	471	17	3	2	4	31	3	3	4
EMPLOYEE 26	30	-	-	8	8	-	-	4	9	-	-	4
EMPLOYEE 27	-	-	571	412	-	-	20	15	-	-	56	33
EMPLOYEE 28	-	75	77	236	-	4	4	5	-	9	13	15
RANGE *	30	17	7	8	4	2	3	3	4	3	3	4
	658	458	525	658	17	10	20	16	44	47	57	46

* Range includes only non-zero values

OTHER STAFFING CONSIDERATIONS

In addition to the above conditions that have driven the use of overtime, there are several other areas where the Utility lacks sufficient staffing resources with qualifications to fill critical needs. These include:

DATA MANAGEMENT

The Utility has no administrative support resources, specifically for data management. As a result of not having this support, Utility staff at all levels must self-perform all technical administrative activities. The following are business needs that are not adequately being met:

- **General Data Management** – This include using data to manage progress and make decisions regarding asset management and resource deployment. Also, costs of operations need to be monitored to track and report efficiently. While staff do use and manage data, they can only do so within the limits of their time availability. Records are kept in a variety of formats, from handwriting to simple spreadsheets and word documents.
- **Data Management and Decision-Support Technologies** - A significant amount of data is not being recorded, limiting the usefulness of information systems to support decision making (e.g. full work history and work performed in the Hansen Computerized Maintenance Management System (CMMS) including work on meters and Meter Transmitting Units).

INSPECTION

An important role in provision of Utility services is inspection. The Utility has had its Water System Inspector position open but unfilled for some time. As a result, critical items that support the quality of installations and viability of key water protections (e.g. Back-Flow preventers) have not been conducted. From the perspective of risk to the Utility and to general public health, the duties as described in the City's Classification for this position are very important and need to be reviewed and updated.

TRAINING AND SUCCESSION MANAGEMENT

Utility employee training needs are extensive. Similar to the training requirement for police and fire, those for utility staff must comply with or meet: 1) DPH regulatory and Health and Safety mandates; 2) City-mandated training requirements; and 3) professional development training needs. Operating in a work environment that is fully-reactive based with limited staff resources means that meeting the training needs of the workforce is extremely difficult and that opportunities for cross-training and career development are difficult to implement. Accordingly, the Utility will need to manage its training activities a a program level, as follows:

- **Review and update Standard Operating and Maintenance Procedures (SOPS) to support consistent actions and responses.** SOPs are the basis for consistent work activities and provide a means of standard problem-solving and responses to common failures to support operational and maintenance consistency.
- **Formalize the training program by developing Training Management Plan (TMP).** The element of the TMP would include:
  - Training needs analysis by position
  - Identification of training opportunities and means to obtain the training (e.g., in-house, external, conferences, etc)
  - Training resources required to support the training (e.g., budget, facilities, equipment and other resources)
  - Tracking of training received and oversight of the program

FIELD SERVICES LABOR REQUIREMENT TOOL ANALYSIS

The Assistant Director of Infrastructure and Field Operations has developed a tool to determine total labor requirements of water distribution system maintenance activities. Exhibit 2.6 presents the tool and its output. The tool examines the labor requirement of primary activities based on activity and frequency. The data are compiled from 2013 actual (in Green) and projected requirements to meet program goals (blue).

The tool projects a requirement for 22.38 FTE's to keep up with the standard workload for water distribution system maintenance. Based on this analysis of actual labor hours expended plus projected labor requirements for activities that are not formal programs, it is estimated that there is an existing deficiency of 5.0 FTEs to cover general maintenance activities.

Exhibit 2.6: *Utility Tool to Assess Water Distribution System Maintenance Labor Requirements*

ACTIVITY	LABOR HOURS PER EVENT	NUMBER OF EVENTS PER YEAR				LBR HRS (INCL. 1.3 LOAD)	FTE @ 1920 HRS/YR
		PROACTIVE MAINTE-NANCE	EXTERNAL REQUESTS	REACTIVE MAINTE-NANCE	TOTAL EVENTS		
Mainline Breaks	57			25	25	1852.5	0.96
Service Leaks	39			24	24	1216.8	0.63
Air Vac Exercise	8	185			185	1924	1.00
Air Vac Replacement	4	50			50	260	0.14
Cla Valve Maintenance	24				0	0	0.00
Unilateral Flushing & Valve Exercise	13	135			135	2281.5	1.19
Steel Reservoir Cleaning	60	5			5	390	0.20
Cold Water Res Cleaning	270	1			1	351	0.18
4A/Sunset Res Cleaning	180	2			2	468	0.24
Greystone/Woodland Reservoir Cleaning	108	3			3	421.2	0.22
Dead End Flushing	1	55			55	71.5	0.04
Valve Replacement	108			24	24	3369.6	1.76
Water Meter & Fire Service Installs	108		72		72	10108.8	5.27
Large Meter Rehab	108		36		36	5054.4	2.63
Meter Gasket or Curb Stop Replacement	8			60	60	624	0.33
Water Meter Maintenance / Lg Meter Accuracy	7.5	260			260	2535	1.32
Meter Box Replacement	12		100		100	1560	0.81
Leak Detection Program (Distribution)	40	52			52	2704	1.41
Leak Detection Program (Residential - STAR)	2			1300	1300	3380	1.76
Leak Notification	0.5		2600		2600	1690	0.88
Backflow Protection	40	52			52	2704	1.41
TOTALS		748	2808	1433	5041	42966.3	22.38

Based upon 2013 Actual Work Performed

Projected Required Labor

3 Compare

EXTERNAL METRIC BENCHMARKING ANALYSIS

RFC conducted an external metric comparison to four other area utilities, as follows:

- City of Santa Monica
- Pasadena Water and Power (City of Pasadena)
- Burbank Water and Power (City of Burbank)
- City of Torrance

The utilities were identified based on shared geography, the relative size of their systems, and the identification of those utilities by Utility staff as appropriate peer agencies for comparison.

Metric comparisons do not, by themselves, provide means to improve a process or increase efficiency. They are simply metric parameters that allow for an assessment of the relative comparison between the Utility and external benchmarking partners. Since each entity has its own unique set of variables that govern the benchmark that is being reviewed (e.g. the data comprising the benchmark may be measured differently), direct comparisons need to be evaluated carefully to account for these variables so that equivalent and fair comparisons can be made. Examples of control variables that must be accounted for when "normalizing" metric data for comparison between utilities include differences in financial and cost accounting, debt service, geographic conditions, costs of living, regulatory, Union and Utility-driven staffing requirements, type and magnitude of technologies employed, economies-of-scale, demographics, geographic considerations and operations and maintenance practices.

RFC developed a survey to gather information from the selected peer utility organizations to minimize the variables associated with explanatory factors. The survey was based on information collected during meetings with Utility staff as to what specific metrics would be of value to asses. Relative staffing practices were compared with RFC's experience and awareness of practices of utility operations and administration. The peer survey focused on:

- Quantity of service provided – distribution miles of pipeline, water delivered, number of accounts
- Demand factors for operating the system – number of pressure zones, wells, and reservoirs

The information gathered from the peer surveys allowed for some insightful comparisons, as follows:

METRIC COMPARISON

The metrics for quantity of service provided – distribution miles of pipeline, water delivered, and number of accounts – were normalized amongst the surveyed utilities in terms of full-time equivalents (FTEs) and budgeted labor cost. Note that budgeted labor costs do not reflect the actual overtime expenditures that were incurred for any of the utilities surveyed. The results are summarized in Exhibit 3.1.

The results showed that there is not significant variation among the peer utilities in terms of units of service delivered per FTE and labor cost per unit of service delivered. The Utility's quantity of services delivered placed in the middle of the group, although it was significantly lower in terms of labor cost per AF of water delivered.

Although the above metrics serve the purpose of providing a "pulse check" in terms of comparability between utilities, there are explanatory variables – characteristics unique to each agency, that make it difficult to rely on the above metrics alone. For example, larger cities like Burbank and Pasadena will enjoy economies of scale – e.g. administrative overhead – that a smaller city like Beverly Hills will not. Conversely, Beverly Hills' uniquely tough terrain requires higher net costs of operation due to:

- **Electrical cost to pump to the elevations within the area;**
- **Maintenance and operation-related labor for additional assets such as the numerous wells, reservoirs, and the number of pressure zones (and related equipment such as Pressure-Regulating Valves [PRVs]) required to pump water through significant elevation gains.**

Exhibit 3.1: *Quantity of Service Provided*

METRIC	BEVERLY HILLS	SANTA MONICA	BURBANK	PASADENA	TORRANCE
Distribution Miles of Pipeline / FTE	6.5	5.4	5.5	4.8	8.0
Total Water Delivered (AF) / FTE	497	316	348	343	509
Number of Accounts / FTE	421	370	510	381	659
Labor $ / Accounts	$281	$331	$206	$197	$201
Labor $ / Distribution Miles	$18,211	$22,488	$19,102	$15,773	$16,620
Labor $ / AF Water Delivered	$6,228	$17,795	$15,352	$23,002	$10,440

Accordingly, RFC evaluated the pressure zones, wells, and reservoirs per FTE across the comparison agencies, as follows:

Exhibit 3.2 presents the Number of Pressure Zones per FTE. The number of pressure zones indicates relative system complexity, both in terms of mechanical requirements and operational complexity, as each zone requires its own PRV, instrumentation and other appurtenances, as well as operations monitoring activities. The number of pressure zones per FTE indicates the number of pressure zones per individual. In general, this means that the higher the number of Pressure zones per FTE, the more equipment and operations-related workload there is per employee. Beverly Hills services 16 pressure zones at 0.61 pressure zones per FTE. **Both of these metrics are well above those for the other four utilities.**

Exhibit 3.3 presents the number of wells per FTE. This metric is similar to the above metric for pressure zones as an indicator of relative complexity/maintenance workload. **While the City does not service as many wells as the other utilities, its 0.15 wells per FTE is comparable to other utilities, exceeded only by Santa Monica's 0.22 wells per FTE.**

Exhibit 3.4 indicates the number of reservoirs per FTE. This metric also represents relative complexity and associated workload as reservoirs also require associated equipment and operations monitoring. **Of the utilities surveyed, Beverly Hills and Burbank lead in terms of number of reservoirs per FTE at 0.38 and 0.41 respectively.**

The above metrics as a whole indicate that the Utility is maintaining and operating more water system assets at a relatively higher complexity per employee than those at other utilities. From this assessment, several relevant observations are noted:

- **Workload – The apparent normal operations and maintenance workload for the Utility is likely higher for its field staff.**
- **Complexity of Operations – The apparent complexity of the treatment plant and water distribution system; and the required skills, knowledge and ability to respond to non-typical operating conditions, requires a workforce that is able meet the technical and physical operational and maintenance demands of the system.**

Exhibit 3.2

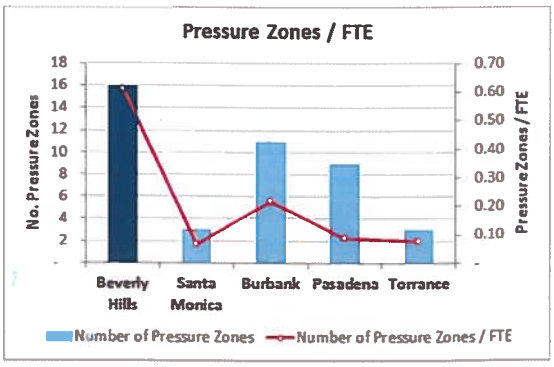


Exhibit 3.3

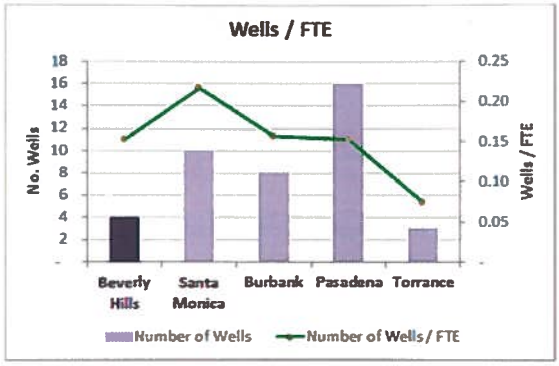
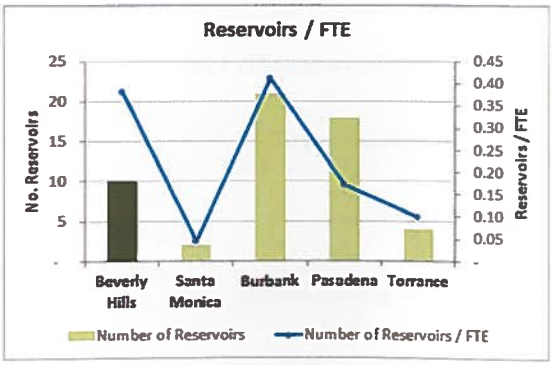


Exhibit 3.4



4 Enhance

Based on our analysis and knowledge of water industry best practices, RFC's opinion is that the Utility does not have sufficient "baseline" resources to meet the required levels of service and to protect the long-term viability of the water infrastructure. As a result, the Utility uses overtime at labor rates well beyond industry norms. We note that every water organization must use overtime as a primary means to correct for periodic staffing challenges and/or to meet specific service-level needs and respond to event-based incidents. However, as noted in Section 2 of this report, the Utility has been forced to use overtime to correct chronic understaffing issues and to attempt to keep up with preventive and routine maintenance requirements of the infrastructure. The associated impacts of sustained, long work-weeks have affected the viability and quality of the Utility's field and plant workforce.

Despite their best efforts, the Utility's field and plant operations staff find themselves in a chronically-understaffed situation in which: judgment errors are made; regulatory standards are not complied with; safety may be compromised; a reactive mode of operation becomes the norm; and, important proactive/other longer-term asset management practices are delayed or are simply not performed.

The understaffed condition has resulted in the Utility not being able to keep up with the work requirements associated with water industry standards-of-care and not complying with regulatory mandates, despite the dedication and often heroic efforts of staff to keep up with the work demands. Thus, despite the extensive use of overtime, the needs of near-term service-level activities and reactive activities become the norm and greatly dominate the day-to-day activities of the Utility workforce. Longer-term asset management and proactive maintenance activities are not able to be performed effectively.

Accordingly, RFC has identified a necessary increase in Utility staffing. Below, are recommendations for 10.3 additionally-budgeted Full-Time Equivalent (FTE) positions that the Utility should consider in order to bring its staffing in balance with the requirements of the Utility's mission and service-level mandates. **The benefits of additional resources include shifting to a proactive mode of operation, significantly reducing overtime expenditures, increasing depth-of-bench and cross-training of staff resources, reducing errors in judgment, and increasing safety and providing better service to the Utility's service area.**

PLANT AND WATER SYSTEM OPERATIONS

The Utility should increase its plant/pumper operations staff by 5.0 FTEs and consider other items as follows:

- Fill the vacant Water Systems Worker III position permanently.
- Fill the already-requested 5.0 FTE's additional Water Worker III positions to cover the DPH regulatory requirement for full-time coverage at the Treatment Plant. Note – this is a mandatory responsibility of the Utility to ensure that DPH requirements for full coverage on 24x7 operations are fully met as per the recent notice by DPH against the Utility in this regard.
- Evaluate the routine monitoring requirements of the Pumper position and reduce non-essential activities accordingly to allow individuals to perform more asset mechanical and preventive maintenance-associated activities.

WATER SYSTEMS MAINTENANCE

The Utility should increase its Field Operations staff by 3.0 FTEs, as follows:

- Water System Worker II (1.0 FTE) - this will bring the total number of staff in this classification to 9.0 FTEs, and the system will be at full staffing once the Water Systems Worker II position is filled as described above.
- Water System Worker I (2.0 FTEs) – this will bring the total number of staff in this classification to 5.0 FTEs.
- Note that while the labor tracking tool discussed in Section 2 indicated a potential need for 5.0 FTE's in the water systems maintenance area, some of that labor will be offset by other recommended positions (e.g. in the back flow program and STAR program).

COMPLIANCE MONITORING AND TECHNICAL ADMINISTRATIVE MANAGEMENT

The Utility should fund and fill the following positions (1.0 additional FTE):

- Water Systems Inspector position (1.0 FTE). As part of filling this important compliance and regulatory-driven position, evaluate the impacts that the requirement for County experience has on limiting the pool of qualified candidates. We recommend requiring AWWA experience in lieu of the existing County requirement which is overly restrictive and severely limits the field of prospective candidates to fill this important position.
- Technical Administrative Analyst position (1.0 FTE). Note that the title of this position is suggested. The City may have a position description that fits the intent of this important resource. This proposed new position will directly support the Utility in keeping up with the vast amount of data management activities that are presently not being performed to allow more effective use of data to track and manage the Utility. This position will require computer literacy and competency in use of spreadsheets and other data management and analysis tools including the Hansen Computerized Maintenance Management System and the STAR program.

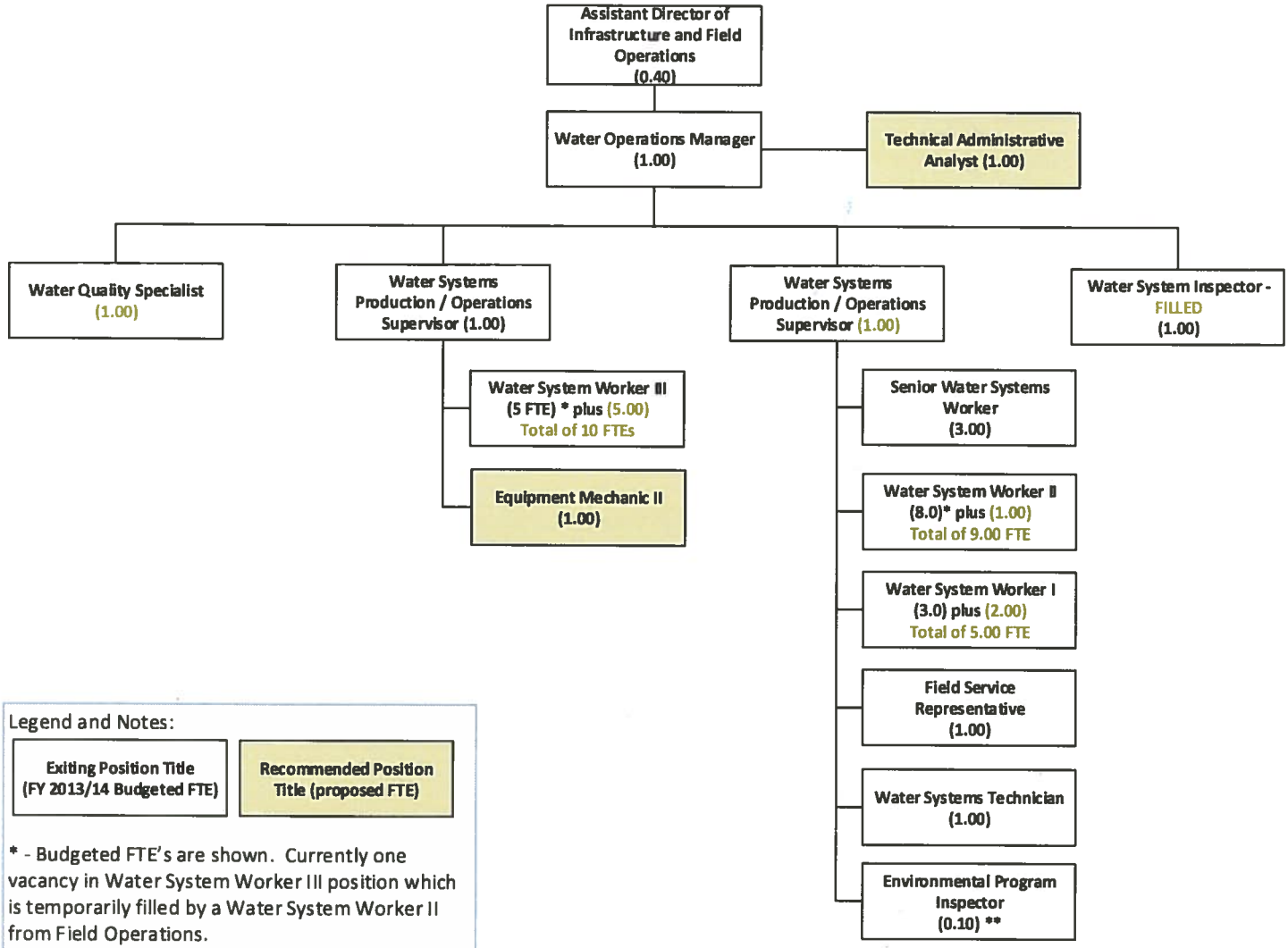
MECHANICAL AND ELECTRICAL MAINTENANCE

The Utility should fund and fill the following proposed new maintenance positions: (1.3 FTEs):

- Equipment Mechanic II position (1.0 FTE). The Utility has no skilled maintenance position and one is needed accordingly. This position would provide expertise in maintaining the Utility's prime movers and other mechanical equipment. This position would be staffed on the M-F day shift only, and would support all elements of the Utility.
- Consider funding part-time Electrician support from Public Works as part of the organization (e.g. 0.3 FTE) - similar to the Environmental Program Inspector position.

Exhibits 4.1 and 4.2 present the proposed organization and the listing by position for the Utility (total of 36.5 FTE's).

Exhibit 4.1: Proposed Organization Chart for the Utility (36.5 FTEs)



Legend and Notes:

Exiting Position Title (FY 2013/14 Budgeted FTE)	Recommended Position Title (proposed FTE)

* - Budgeted FTE's are shown. Currently one vacancy in Water System Worker III position which is temporarily filled by a Water System Worker II from Field Operations.

** - from Solid Waste Division

Exhibit 4.2: *Proposed Listing by Position for the Utility*

POSITION DESCRIPTIONS	BUDGETED FTE FY 2013/14	PROPOSED FTE
ASSISTANT DIRECTOR OF INFRASTRUCTURE AND FIELD OPERATIONS	0.40	0.40
WATER OPERATIONS MANAGER	1.00	1.00
WATER SYSTEMS PRODUCTION/OPERATIONS SUPERVISOR	1.85	2.00
WATER QUALITY SPECIALIST	0.80	1.00
ENVIRONMENTAL PROGRAM INSPECTOR [1]	0.10	0.10
WATER SYSTEM INSPECTOR [2]	1.00	1.00
SENIOR WATER SYSTEM WORKER	3.00	3.00
WATER SYSTEM WORKER III	5.00	10.00
WATER SYSTEM WORKER II	8.00	9.00
WATER SYSTEM WORKER I	3.00	5.00
WATER SYSTEM TECHNICIAN	1.00	1.00
FIELD SERVICE REPRESENTATIVE	1.00	1.00
EQUIPMENT MECHANIC [3]		1.00
TECHNICAL ADMINISTRATIVE ANALYST [3]		1.00
TOTAL FULL-TIME POSITIONS	26.15	36.5

(1) Solid Waste Division position

(2) Currently vacant

(3) New Position

IMPACTS OF STAFFING RECOMMENDATIONS ON THE EXTERNAL METRIC COMPARISON

The impacts of the recommended Utility staffing number of 36.5 FTEs to the benchmarking partners are presented in the following discussion. Only impacts to the comparison are presented here. Please refer to Section 3 for more detailed and relevant discussion on each comparison.

The metrics for quantity of service provided – distribution miles of pipeline, water delivered, and number of accounts – were normalized amongst the surveyed utilities in terms of full-time equivalents (FTEs) and budgeted labor cost. The results are summarized in Exhibit 4.3.

Exhibit 4.3: *Impacts of Proposed vs. Current Staffing on External Metric Comparison*

METRIC	BEVERLY HILLS (PROPOSED)	BEVERLY HILLS (CURRENT)	SANTA MONICA	BURBANK	PASADENA	TORRANCE
Distribution Miles of Pipeline / FTE	4.7	6.5	5.4	5.5	4.8	8.0
Total Water Delivered (AF) / FTE	357	497	316	348	343	509
Number of Accounts / FTE	302	421	370	510	381	659

For quantity of service delivered metrics, the recommended increase to 36.5 FTEs for the Utility falls more in balance within the band of variation among the peer utilities in terms of units of service delivered per FTE and labor cost per unit of service delivered.

The following figures show the impact of proposed staffing as compared to current staffing using the external metric comparisons described in Section 3.

Exhibit 4.4 presents the impacts of recommended staffing levels on the Number of Pressure Zones per FTE. This means that the higher the number of pressure zones/FTE, the more equipment and operations-related workload there is per employee. **The Utility remains significantly higher than its peer utilities in this metric (0.45 as compared to the next high of 0.20 Zones/FTE) with the proposed staffing levels.**

Exhibit 4.5 presents the number of wells per FTE and shows the impacts of the proposed staffing increase. This metric is similar to the above metric for pressure zones as an indicator of relative complexity/maintenance workload. **While the Utility does not service as many wells as the other utilities, the recommended staffing increases result in a metric of 0.11 wells per FTE which remains comparable to its peers.**

Exhibit 4.6 indicates the number of reservoirs per FTE. This metric also represents relative complexity and associated workload as reservoirs also require associated equipment and operations monitoring. **With the recommended increase in staffing, the Utility remains very high in the number of reservoirs to FTEs as compared to its peer utilities.**

The above metrics as a whole indicate that, with the increases in staffing levels as proposed, the Utility will still be maintaining and operating more water system assets at a relatively higher level of complexity per FTE than those at other utilities.

Exhibit 4.4

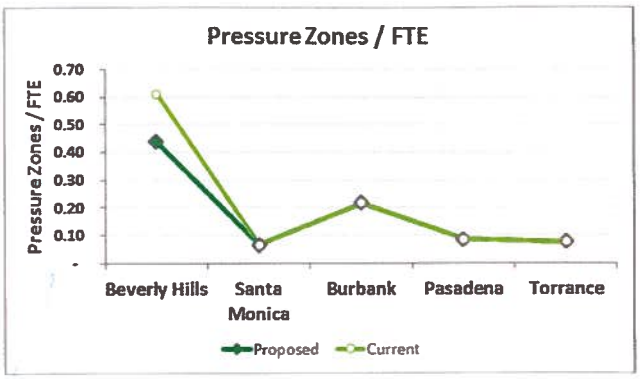


Exhibit 4.5

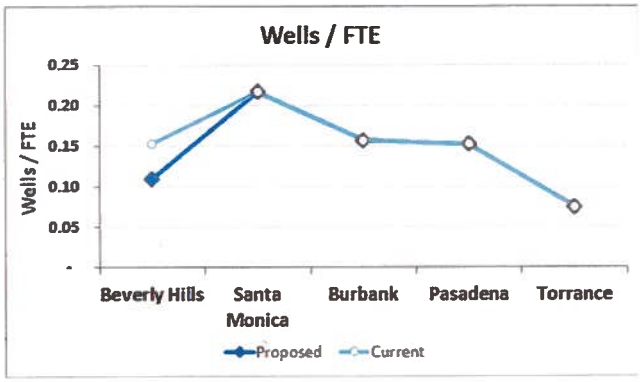
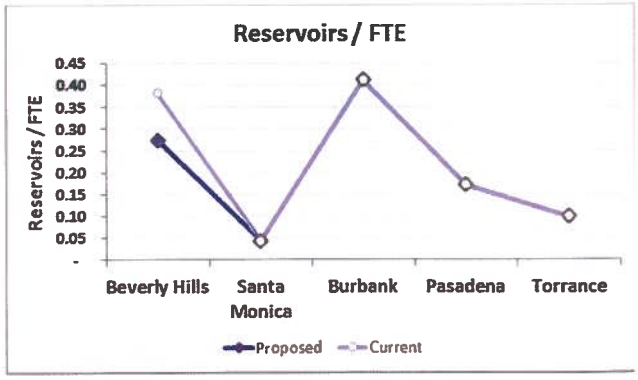


Exhibit 4.6



CONCLUSION

The recommendations listed in this report will meet the Utility's objective to ensure that it will effectively meet regulatory-driven mandates and ongoing service requirements by deploying a workforce that is sufficiently sized and applies effective work practices to respond to the dynamic demands of the Utility's service area.

The next steps are for the Utility to prioritize each recommendation based on the benefits described in this report; determine the level of additional analysis required to gauge the feasibility of each recommendation; and develop a schedule and analysis methodology deciding whether to implement the recommendation.

Studies such as this require extensive staff time and contributions. In addition to all of the Utility staff who participated in the interview process, the following individuals played an important role in reviewing the findings and offering valuable insights in confirming opportunities for improvement. These individuals are: George Chavez, Trish Rhay, Kevin Watson, David Hillyer, Jack Merluzzo, and Geo Herrera.

city of

BEVERLY HILLS

DEPARTMENT OF PUBLIC WORKS

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