Summary Title: Item 3 Preliminary Rate Change Projections for FY 2021

Title: Discussion of Preliminary Rate Change Projections for the Electric, Gas, Water and Wastewater Collection Utilities for Fiscal Year 2021

From: City Manager

Lead Department: Utilities

This item is for discussion and no action is requested. Staff will use input from the Utility Advisory Commission (UAC) on its preliminary rate projections for the Electric, Gas, Water and Wastewater Collection utilities to guide and finalize its recommended FY 2021 Financial Plans and proposed rate changes.

The attached presentation describes staff’s preliminary rate projections for the various utilities. Staff will return to the UAC with proposed Financial Plans and rates between February and April 2019.

Attachments:

- Attachment A: Preliminary Rates Presentation
PRELIMINARY FY 2021 RATE CHANGES

December 2019
Financial Forecast Summary

• Review four funds: Electric, Gas, Water and Wastewater Collection
• Refuse rate projections included for information
• Review of Financial Reserves
• Staff projects need for Electric, Gas, and Wastewater Collection rate increases for FY 2021
• Communication plans being prepared
• Wastewater Cost of Service (COSA) update to be completed in FY 2020
• Gas and Water Cost of Service (COSA) updates were completed in FY 2019
## FY 2020 Rate Projections – Res/Com

<table>
<thead>
<tr>
<th>Service</th>
<th>FY 2020</th>
<th>FY 2021</th>
<th>FY 2022</th>
<th>FY 2023</th>
<th>FY 2024</th>
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<tbody>
<tr>
<td>Electric Utility</td>
<td>4 / 5-9%</td>
<td>4%</td>
<td>4%</td>
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<td>3%</td>
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<tr>
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<td>8 / 2-3%</td>
<td>8%</td>
<td>8%</td>
<td>4%-6%</td>
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</tr>
<tr>
<td>Wastewater</td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
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</tr>
<tr>
<td>Water Utility</td>
<td>4 / (1)-3%</td>
<td>2%</td>
<td>3%</td>
<td>6%</td>
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<tr>
<td>Refuse</td>
<td>-</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
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<tr>
<td>Storm Drain</td>
<td>4.5%</td>
<td>2%-3%</td>
<td>2%-3%</td>
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</tbody>
</table>

Commercial customers may have several rate schedules available to them, and the rate changes affecting each may be different depending on the results of updated Cost of Service analysis.

*Gas rate changes are shown with commodity rates held constant. Actual gas commodity rates will vary monthly with wholesale market fluctuations.
**FY 2021 Preliminary Projections – Res/Com**

<table>
<thead>
<tr>
<th></th>
<th>FY 2020 (Act)</th>
<th>FY 2021</th>
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<td>0%</td>
<td>0%</td>
<td>5%</td>
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<tr>
<td>Refuse</td>
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<td>0%</td>
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*Gas rate changes are shown with commodity rates held constant. Actual gas commodity rates will vary monthly with wholesale market fluctuations.
Ongoing Cost Containment

• Consistent with the Utilities Strategic Plan, cost containment is being instituted as an ongoing priority and annual cycle
  • Fall completion of preliminary out-year rate forecasts
  • Review by all Divisions for alignment of multiyear strategies
• Ongoing management review of personnel actions
  • Review/revision of position classifications to match evolving needs
  • Addition/Deletion of positions to reflect organizational priorities
  • Review/approval to fill individual position vacancies in conjunction with ASD Budget Office and Human Resources
• Regular review of performance metrics and expenditures
Recently implemented cost control and efficiency measures:

- Sell surplus renewable energy (~1.2M/yr)
- Negotiated discounted price on solar PPA (~$200K/yr)
- Agreement with Valley Water - $250K to $1M/year + up to $16 million in funding for reverse osmosis facility
- Energy settlement automation – saved staff time, reallocated to other work.
- Established a cross-functional field crew to install water, gas, and sewer services simultaneously at new construction sites, reducing hours spent in the field. Staff time freed up to be reallocated to sewer replacements.
- Implemented mobile workforce applications, reducing administrative data entry time, freeing up staff for other work.
- Scheduled larger CIP projects every other year to achieve efficiencies in project management and also better bids / lower construction costs
- Expanding use of bank draft to reduce credit card fees, particularly for large revenue accounts
Cost Containment Examples

• For future exploration:
  • Explore outsourcing hedging and risk management to NCPA
  • Switch to new customer information system with reduced support costs
  • Explore adding batteries to solar resources to improve value
  • Increased water and energy end use technical training for Customer Service reps, reducing transferred phone calls
  • Working to cluster gas main replacements to reduce mobilization costs for construction contractors
  • Maximizing water meter life by sample testing accuracy and using them as long as they are still measuring accurately rather than replacing according to a prescribed lifetime (e.g. 20 years)
  • Evaluating buying materials for pipeline replacement in-house rather than having contractors buy them – goal is to reduce construction markups
  • Worked with NCPA to renegotiate cost savings, value enhancements, and price risk mitigation measures into the Western contract ahead of 2020 renewal
ELECTRIC UTILITY
**Electric Proposal and Goals**

- **FY 2021 Proposal: 3% rate increase**
  - FY 2020 year-end Operations Reserves projected to be within guideline levels
  - Other reserve funds projected to be healthier as well at FY 2020 year-end:
    - $51M in Special Projects Reserve – earlier repayment of a $10M loan from this reserve in previous years
    - $17.4 million in Hydro Stabilization (at target level)
- **Goals:**
  - Bring rates in line with costs, using reserves to smooth rate increases
  - Replenish and maintain reserve health over the forecast horizon
Electric Utility Basics

The Electric Utility Network

- Generation Plant
- Transmission Lines
- Transformer
- Substation Transformer
- Distribution Lines
- Distribution Transformer
- Meter

Palo Alto’s primary business
Electric Distribution System

472 miles of distribution line
(45% overhead, 55% underground)

- Nine substations
- 2000 overhead transformers
- 1100 underground/substation transformers
Electric Supply Contracts

**Legend**
- hydroelectric projects
- solar projects
- wind projects
- landfill gas projects

**49% Hydro**
1. Central Valley Project - 38%
2. Calaveras Project (Calaveras Big Trees State Park) - 11%

**30% Solar**
3. Frontier Solar (Newman, CA) - 5%
4. EE Kettleman Land (Kettleman City, CA) - 5%
5. Hayworth Solar Capacity (Bakersfield, CA) - 6%
6. Western Antelope Blue Sky Ranch B (Lancaster, CA) - 5%
7. Elevation solar C (Pittsburg, CA) - 9%

**11% Wind**
8. High Winds (Birds Landing, CA) - 5%
9. Shiloh I Winds Capacity (Birds Landing, CA) - 6%

**10% Landfill Gas**
10. Keller Canyon LFG (Pittsburg, CA) - 1%
11. San Joaquin LFG (Linden, CA) - 3%
12. Ox Mountain (Half Moon Bay, CA) - 4%
13. Santa Cruz LFG (Watsonville, CA) - 1%
14. Johnson Canyon LFG (Capacity Gonzales, CA) - 1%
Electric Utility Cost Structure

Electric Supply: The cost to buy electricity and transport it to Palo Alto, including operational overhead (e.g. energy scheduling).

Electric Distribution: The cost to distribute electricity within Palo Alto, including: maintaining and replacing electric infrastructure, customer service, billing, administration, etc.
**Long Term Cost Trends**

Annualized Increase, FY14-FY20:
- **Electric Supply:** 1%/yr
- **Distribution:** 3%/yr

Annualized Increase, FY20-FY25:
- **Electric Supply:** 3%/yr
- **Distribution:** 3%/yr

[Bar chart showing cost trends for FY 2014, FY 2020 (Budget), and FY 2025 (Projected).]
Electric Utility Cost Structure

Electric Supply: The cost to buy electricity and transport it to Palo Alto, including operational overhead (e.g. energy scheduling).

Electric Distribution: The cost to distribute electricity within Palo Alto, including: maintaining and replacing electric infrastructure, customer service, billing, administration, etc.

Electric Distribution costs (in green): $50 million 38%

Electric Supply costs (in blue): $82 million 62%
**Electric Supply Cost Forecast**

**Annualized Increase, FY14-FY20:**
- Overhead: 2%/yr
- Transmission: 11%/yr
- Generation: (1)%/yr

**Annualized Increase, FY20-FY24:**
- Overhead: 2%/yr
- Transmission: 4%/yr
- Generation: 2%/yr

<table>
<thead>
<tr>
<th>FY 2014</th>
<th>FY 2020 (Budget)</th>
<th>FY 2025 (Projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>Transmission</td>
<td>Overhead</td>
</tr>
</tbody>
</table>

*Source: City of Palo Alto*
Supply Cost Drivers

• Overhead costs have decreased as NCPA has sought revenue by providing services to more agencies.

• Transmission costs have increased dramatically – system replacement, new lines to integrate new generators. CPA partners with others to advocate for cost control.

• Renewable projects have come online. In the longer term, generation costs should stay fairly stable due to CPA’s long-term fixed price contracts.
Electric Distribution Cost Trends

Annualized Increase, FY14-FY20:
- Electric Capital Investment: 5%/yr
- Electric Distribution Operations: 3%/yr

Annualized Increase, FY20-FY25:
- Electric Capital Investment: 5%/yr
- Electric Distribution Operations: 3%/yr

FY 2014 FY 2020 (Budget) FY 2025 (Projected)

- Debt Service
- Operations
- Capital Investment
Distribution Cost Drivers

• Medical/retirement benefit costs and associated overhead costs continue to increase

• Increased capital investment in the electric distribution system needed due to system age

• Underground construction costs have increased substantially

• Additional contract expense for line crew until internally staffed
Electric Rate Change Breakdown

Total Rate Increase: 3%

- Electric Supply Cost Increases
- Operations cost increases
- CIP expense increases
- Increased non-retail revenues
- Load loss

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Electric Supply Operating Rsv Projections

- Reserve Maximum
- Reserve Target
- Reserve Minimum
- Reserve (Year-End)

FY 2019 - FY 2025

Millions

$40
$35
$30
$25
$20
$15
$10
$5
$0

FY 2019 FY 2020 FY 2021 FY 2022 FY 2023 FY 2024 FY 2025
Electric Dist Operating Reserve Projections

FY 2019 FY 2020 FY 2021 FY 2022 FY 2023 FY 2024 FY 2025

- Reserve Maximum
- Reserve Target
- Reserve Minimum
- Reserve (Year-End)
- Risk Assessment

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GAS UTILITY
Gas Utility Projections

• Rate Design:
  • One-third of the rate is “supply-related:” gas supply, transmission, and environmental charges. These rates vary monthly according to market-driven costs that are passed directly to customers
  • Two-thirds of the rate is set based on the City’s costs for maintaining its gas distribution system (gas mains, services, related equipment)

• FY 2021 preliminary proposal:
  • 5% overall increase due to distribution system rate increases
  • Supply-related costs will vary with the market and may result in a total customer bill increase that is higher or lower than 5%.
  • Reduced forecast from last year due to lower distribution and CIP cost projections.
Gas Utility Basics

City of Palo Alto gas distribution system:
- 20,000 meters
- 205 miles of mains
- 18,000 service lines

Map of Western natural gas transmission lines

“Malin” gas delivery point (70% of Palo Alto gas)

“City gate” gas delivery point (30% of Palo Alto gas)

Redwood pipeline – Palo Alto has transmission rights
Gas Distribution: The cost to distribute gas within Palo Alto, including: maintaining and replacing gas infrastructure, customer service, billing, administration, etc.

* Market-based pass-through costs.
Long Term Cost Trends

Supply, Transmission, Environmental:
- FY16-FY20: 23%/yr
- FY20-FY25: 2%/yr*

Distribution:
- FY16-FY20: (1)%/yr
- FY20-FY25: 7%/yr

*Forecast is uncertain and will vary with the markets.
Gas Supply Cost Drivers

- Gas supply – some volatility in gas market prices. Gas prices have risen in recent years as supplies have become tighter, demand has increased.

- PG&E gas transmission rates rising to fund safety investments in the wake of the San Bruno disaster.

- Cap and trade costs continue to rise (as intended by design).

- Carbon Neutral Gas Plan.
Gas Distribution Costs

- Capital Investment: $5.6 million (20%)
- Debt Service: $0.2 million (1%)
- Operations: $22.3 million (79%)
Gas Distribution Cost Trends

Annualized Increase, FY16-FY20:
- Gas Capital: -11%/yr*
- Gas Operations: 2%/yr

Annualized Increase, FY20-FY25:
- Gas Capital: 28%/yr*
- Gas Operations: 2%/yr

- No main replacement project budget in FY 2020, 2022 & 2024 so CIP spending unusually low.
- Larger main replacement projects planned in FY’s 2021, 2023 and 2025.
Gas Distribution Cost Drivers

- Health, retirement, and associated overhead costs continue to increase
- Underground construction costs have increased substantially as well
- Temporary funding ($1M/yr) for three years for crossbore investigations (starting FY 20)
- Increases in overhead transfers
Gas Distribution (in green): The cost to distribute gas within Palo Alto, including: maintaining and replacing gas infrastructure, customer service, billing, administration, etc.

* Market-based pass-through costs.
Gas Cost and Revenue Projections

Rate changes (excluding supply-related rate changes)

0%  0%  8%  0%  4%  5%  5%  4%  4%  4%  2%

$40 - Revenue

$30 - Capital Investment

$20 - Gas Supply

$10 - Operations

$0 - Transfers

$0 - Debt Service

Actuals


Projections

CITY OF PALO ALTO
Gas Rate Change Breakdown

Total Rate Increase: 5%

- 1.3% CIP Expense increases
- 3.7% O&M Expense increase
Wastewater Projections

• FY 2021 proposal:
  • 6% overall rate increase
• Future projections (following four years)
  • Average 5% per year increases
Wastewater Utility Basics

- Five partners: Stanford, East Palo Alto, Los Altos Hills, Lost Altos, and Mountain View
- Wastewater drains from partner systems through the City of Palo Alto Collection System, and into the City of Palo Alto Regional Water Quality Control Plant (RWQCP) for treatment
- City of Palo Alto Utilities Department manages collection system, Public Works manages the RWQCP.
Wastewater Utility Cost Structure

Palo Alto’s share of the cost to treat sewage at Palo Alto’s Regional Water Quality Control Plant

Cost to collect sewage within Palo Alto, including: maintaining and replacing sewer infrastructure, customer service, billing, administration, etc.

Collection
$11.5 million
49%

Treatment
$11.7 million
51%
Long Term Cost Trends

Annualized Increase, FY16-20:
- Treatment: 7.6%/yr
- Collection: 4.0%/yr

Annualized Increase, FY 20-25:
- Treatment: 5.0%/yr
- Collection: 2.1%/yr

Note: Collection capital reflects 2-year average due to alternate years high/low spending pattern
Treatment Cost Forecast

Annualized Increase, FY16-FY20:
- Treatment Operations: 7.5%/yr
- Treatment Debt Service: 7.7%/yr

Annualized Increase, FY20-FY25:
- Treatment Operations: 3.6%/yr
- Treatment Debt Service: 10.8%/yr

FY 2016

FY 2020 (Budget)

FY 2025 (Projected)
Treatment Cost Drivers

- Regional Water Quality Control Plant needs rehabilitation
  - Design Completed in August 2019, Plan to Solicit Bids in 2020
- Cost Drivers:
  - Cost of Construction continue to rise
  - Material Costs and Electrical Work are particularly expensive
Wastewater Collection Costs

- Capital Investment: $5.6 million (49%)
- Operations: $5.9 million (51%)
Wastewater Collection Cost Trends

Annualized Increase, FY16-20:
- Collection System Capital: 6.8%/yr
- Operations: 2.2%/yr

Annualized Increase, FY20-25:
- Collection System Capital: 1.7%/yr
- Operations: 2.4%/yr

Note: Collection System Capital reflects 2-year average due to alternate years high/low spending pattern
Operations and Capital Cost Drivers

- Salary and benefit costs for existing staff continue to increase.
- Underground construction costs have increased substantially as well.
- Capital Spending:
  - Large Capital Improvement Projects will be conducted every two years.
  - FY 2020 is a large CIP budget year, while FY 2021 is a lower CIP budget year.
Wastewater Projections

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual</th>
<th>Projected</th>
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<tbody>
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<td>$15</td>
<td>$20</td>
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<tr>
<td>2016</td>
<td>$17</td>
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<td>2017</td>
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<td>2024</td>
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<td>$38</td>
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<tr>
<td>2025</td>
<td>$35</td>
<td>$40</td>
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</table>

- **Revenue**: 6% 6% 4% 4% 3%
- **Collection Capital Expense**: 9% 9% 0% 0% 11%
- **Collection Operations**: 0% 0% 11%
- **Collection Debt Service**: 7%
- **Treatment Capital Expense & Debt**: 4% 4%
- **Treatment Operations**: 11% 7% 6% 6% 4% 4%
Wastewater Rate Change Breakdown

Total Rate Increase: 6%

- Treatment Cost Increase: 2.4%
- O&M Expense Increase: 2.4%
- Existing Revenue Shortfall: 1.2%
Wastewater Operations Reserve Projections

<table>
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<tr>
<th>Year</th>
<th>Actual</th>
<th>Projection</th>
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<tr>
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<td>Reserve Maximum</td>
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<td>2025</td>
<td>$9</td>
<td>Reserve (Year-End)</td>
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(Millions)
• FY 2021 proposal:
  • 0% overall rate increase
  • FY 2020 year-end Operations Reserves above guideline levels and projected to be at target levels by year end FY 2021
  • Seeding and establishing level funding for the capital reserve to ensure reserve health and sufficient funds for critical capital investments

• Future projections
  • 0% in FY 2022
  • Higher increases starting in FY 2023 as SFPUC supply costs rise
Water Utility Basics

Water Supply from Sierras
(SFPUC’s Hetch Hetchy system)

Water Distribution in Palo Alto
Water Utility Cost Structure

Cost to bring the water to Palo Alto

Distribution
$22.9 million
51%

Supply
$21.6 million
49%

Cost to distribute water within Palo Alto, including: maintaining and replacing water infrastructure, customer service, billing, administration, etc.
Long Term Cost Trends

Annualized Increase, FY14-FY20:
Supply: 5.5%/yr
Distribution: 0.5%/yr

Annualized Increase, FY20-FY25:
Supply: 3.4%/yr
Distribution: 4.3%/yr

Note: Distribution capital reflects 2-year average due to alternate years high/low spending pattern
Water Supply Cost Drivers

• Water System Improvement Project (WSIP) a major driver

• 2002: advocacy by wholesale customers results in AB 1823 requiring SFPUC to adopt and implement the WSIP

• In 2010 construction began - $4.8B, one of the largest water projects in the nation

• Level of service goal: return to service in 24 hours after an earthquake
Water Supply Cost Drivers

• WSIP spending 96% complete as of Jan 2019

• “Upcountry” system in the Sierras still needs work.

• Wholesale customers (via BAWSCA) advocating for improvements in long-term capital planning

• Necessary and improves reliability, but supply costs will increase in the future as a result
SFPUC rates are artificially low due to a refund of wholesale revenue over-collected in previous years. Refund will be delivered from FY 2020 to FY 2023.
Water Distribution Costs

- Capital Investment: $4.5 million (20%)
- Debt Service: $3.2 million (14%)
- Operations: $15.2 million (66%)

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Water Distribution Cost Trends

Annualized Increase, FY14-FY20:
- Capital: -4.3%/yr
- Operations: 3.3%/yr
- Debt Service: 0.0%/yr

Annualized Increase, FY20-FY25:
- Capital: 8.4%/yr
- Operations: 2.5%/yr
- Debt Service: 3.6%/yr

Note: Distribution capital reflects 2-year average due to alternate years high/low spending pattern
Operations Cost Drivers

- Health, retirement, and associated overhead costs continue to increase.
- Underground construction costs have increased substantially as well.
- There is a planned increase in costs within the five year forecast period for generator backup at pumping stations.
Capital Cost Drivers

- Construction costs have increased substantially
- Large one-time costs related to emergency water supply and reservoir rehabilitation
Water Cost and Revenue Projections

Rate Changes

- Capital Investment
- Operations
- Water Supply
- Debt Service
- Revenue

Actuals
- FY 2014: 7%
- FY 2015: 0%
- FY 2016: 14%
- FY 2017: 6%
- FY 2018: 4%
- FY 2019: 3%
- FY 2020: 1%
- FY 2021: 0%
- FY 2022: 0%
- FY 2023: 5%
- FY 2024: 5%
- FY 2025: 5%

Projections
- FY 2014: 7%
- FY 2015: 0%
- FY 2016: 14%
- FY 2017: 6%
- FY 2018: 4%
- FY 2019: 3%
- FY 2020: 1%
- FY 2021: 0%
- FY 2022: 0%
- FY 2023: 5%
- FY 2024: 5%
- FY 2025: 5%
Water Operating Reserve Projections

Actual vs. Projected

FY 2019 FY 2020 FY 2021 FY 2022 FY 2023 FY 2024 FY 2025

Reserve Maximum
Reserve Target
Reserve Minimum
Reserve (Year-End)
Risk Assessment