

Electric Utility

Features and Costs by Option							
Project Category	Projects	0	1	November 28, 2017 Revised Proposal Modified Option	2	October 6, 2015 City Council Direction Option	4
				1		3	
Overhead Projects  <i>Projects to rehabilitate and replace overhead equipment, such as poles, wires, transformers, and street lights to improve safety, efficiency and reliability of the electric system.</i>	Neighborhood Streetlight Retrofit to replace streetlight posts, fixtures and power feeds in the greater Wood Streets and downtown area.	1810	1770	1270	4050	4750	8800
	Rehabilitation and replacement of overhead equipment, including poles, and associated wires to meet California Public Utilities Commission General Order 165 standards.	1886	2000	3080	3850	5900	9800
	4kV to 12kV neighborhood conversions to prevent circuit overload (34 total)	12yrs	11yrs	6yrs	7yrs	5yrs	5yrs
	Overhead switch replacements	230	300	600	600	720	1000
Overhead 10-year costs		\$58,053,000	\$66,270,000	\$84,984,000	\$128,096,000	\$150,800,000	\$278,531,000
Underground Projects  <i>Projects to rehabilitate and replace underground conduits, cables, and related equipment to improve safety, efficiency and reliability of the electric system</i>	Miles of cable and conduit replacements	34	54	62	64	77	128
	Vault replacements and rehabilitations	106	170	262	270	320	540
	Underground switch replacements	62	100	116	120	145	200
Underground 10-year costs		\$69,740,000	\$85,282,000	\$125,625,000	\$129,249,000	\$154,423,000	\$255,206,000
Substation Projects  <i>Projects related to neighborhood power stations to efficiently distribute power throughout the service area.</i>	New neighborhood substation in Arlanza	-	-	-	-	✓	✓
	Substation transformer replacements	4	5	7	7	7	9
	Substation switchgear replacements	3	3	4	4	5	6
	Substation breaker replacements	40	45	60	70	70	85
	Substation relay replacements	322	375	540	540	570	570
Substation 10-year costs		\$47,637,000	\$57,541,000	\$76,744,000	\$79,875,000	\$98,102,000	\$123,787,000

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System Automation  <i>Technology, security and system automation tools and applications to improve cyber security and overall efficiency.</i>	Operational Technology planning, management, and cyber & physical security improvements	✓	✓	✓	✓	✓	✓
	Contact Center Interactive Voice Response system, Customer Web Portal, and Customer Information System	-	-	-	-	✓	✓
	Central Stores Warehouse Inventory System		✓	✓	✓	✓	✓
	Geographic Information System replacement	✓	✓	✓	✓	✓	✓
	Mobile applications to support Work Management System, Customer Relationship Management system, inspection, outage management system and GIS applications	-	-	-	-	✓	✓
	Operational Data Management System and business analytics to support data integration and reporting (KPI dashboarding)	-	✓	✓	✓	✓	✓
	Network Communications Systems o improve communication backbone and improve system functionality, efficiency and cybersecurity	-	✓	✓	✓	✓	✓
	Land-Mobile Radio system to improve office-to-field and field-to-field communication to support worker safety and emergency response	-	✓	✓	✓	✓	✓
	Advanced Metering Infrastructure and Meter Data Management Systems to integrate AMI data and support customer facing applications and web integration of CIS	✓	✓	✓	✓	✓	✓
	Automated Vehicle Locating to improve fleet efficiency and support worker/crew locations for safety and outage management efficiencies.	-	-	-	-	✓	✓
	Distribution Automation System	✓	✓	✓	✓	✓	✓
	Substation Automation providing real-time monitoring of asset condition and control networks that allow secure remote access and control	✓ -	✓	✓	✓	✓	✓
	Outage Management System to predict and detect outages automatically	-	✓	✓	✓	✓	✓
	Supervisory Control and Data Acquisition (SCADA) to improve system automation, efficiency and cyber security.	✓	✓	✓	✓	✓	✓
	EV Charging Infrastructure	✓	✓	✓	✓	✓	✓
	LED Street Light Retrofit	✓	✓	✓	✓	✓	✓
System Automation 10-year costs		\$76,869,000	\$93,482,000	\$93,609,000	\$93,482,000	\$108,300,000	\$108,300,000

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				<u>1</u>		<u>3</u>	
<b>Recurring Projects</b> <i>Recurring projects related to RPU's obligation to serve new incoming load</i>		✓ -	✓	✓	✓	✓	✓
<b>Recurring 10-year costs</b>		\$76,723,000	\$118,866,000	\$108,408,000	\$118,866,000	\$118,866,000	\$118,866,000
<b>Total</b>		\$329,022,000	\$421,441,000	\$489,370,000	\$549,568,000	\$630,491,000	\$884,690,000