

# Freeman Switchgear and Transformer Upgrade Project

Riverside Public Utilities

Board of Public Utilities  
November 5, 2018

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## BACKGROUND

Substation Equipment:

1. Essential components of the power grid
2. Critical to the reliability and optimum operation of the electric grid
3. Expected design life of approximately 40 years
4. Planned upgrades help meet demand, improve safety and system reliability

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## BACKGROUND

Substation Transformers and Switchgears in RPU's System:

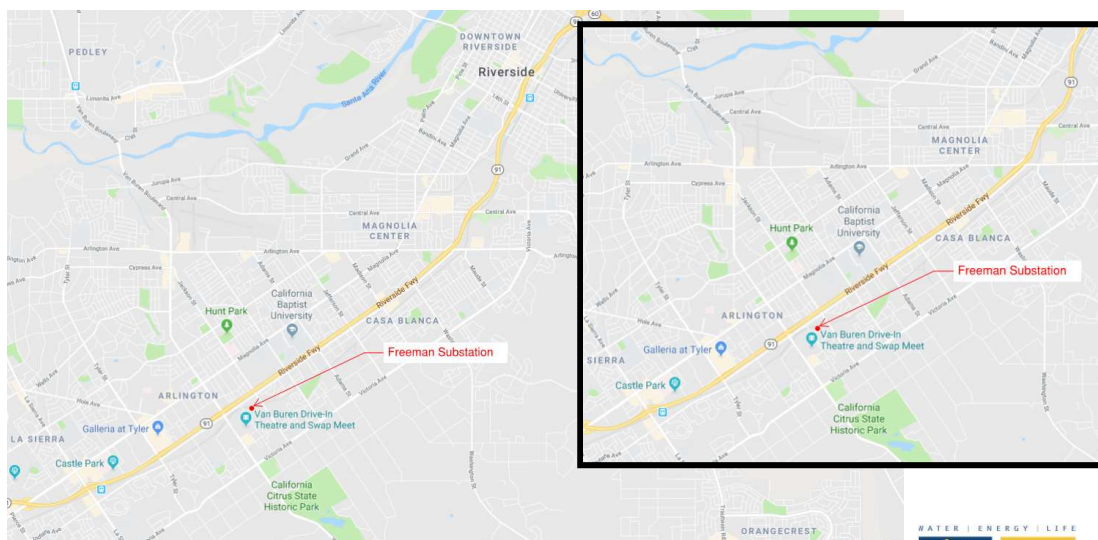
1. Greatest impact to customers (nearly 5,000)
2. Most expensive equipment in the electric system
3. Nearly 30% exceed design life
4. Up to 48-week lead time

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## FREEMAN SUBSTATION



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## FREEMAN SUBSTATION

Internal view of Switchgear 1 & 2 houses critical protection and auxiliary equipment. Nearly 60 years old.



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## FREEMAN SUBSTATION

External view of transformer no. 2, and switchgear no.1 & 2



Old Unit



New Unit

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## DISCUSSION

Scope of Work Includes:

1. Purchase of switchgears and protective relaying equipment, transformer, engineering, construction, and testing
  - A. Construction will be performed in three phases
  - B. SUB-806 – Invited six switchgear vendors to submit Bids
  - C. SUB-793 – Invited six relay panel vendors to submit Bids
2. Purchase of equipment pursuant to Section 404 of Purchasing Resolution No. 23256
3. Return to Board in February 2019 for approval to purchase power transformers



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## PROPOSAL RESULTS (SUB-806)

SWICHGEAR VENDORS (SUB-806)	AMOUNT	RANKING
<b>Crown Technical Systems</b>	<b>\$1,343,878.13</b>	<b>1</b>
Eaton	\$1,426,205.14	2
Powercon Corp	\$1,453,313.25	3
Myers Power Products	\$1,469,874.79	4



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## PROPOSAL RESULTS (SUB-793)

RELAY PANEL VENDORS (SUB-793)	AMOUNT	RANKING
<b>Keystone Electrical Manufacturing</b>	<b>\$53,576</b>	<b>1</b>
Electrical Power Products, Inc.	\$59,213	2
Crown Technical Systems	\$61,035	3
Control Panel USA, Inc.	\$73,159	4

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## PROJECT BREAKDOWN

DESCRIPTION	AMOUNT
Switchgear - Crown Technical Systems SUB-806	\$1,343,878.13
Relay Panel – Keystone SUB-793	\$53,576.17
Transformer (Estimated)	\$1,400,000
Misc. Parts and Material, and Equipment Rentals	\$240,000
Project Management and Engineering Design	\$600,813
Construction, Factory Testing, Field Testing and Commissioning	\$1,068,321
Contingency (10%)	\$529,611.70
<b>Work Order Total</b>	<b>\$5,463,000</b>

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## Recommendations

That the Board of Public Utilities:

1. Award Bid No. SUB-806 for furnishing and delivery of a combined metal-clad switchgear enclosure to Crown Technical Systems of Fontana, California, in the amount of \$1,343,878.13;
2. Award Bid No. SUB-793 for furnishing and delivery of protective relay panels to Keystone Manufacturing Co. of Des Moines, Iowa, in the amount of \$53,576.17; and
3. Approve Work Order No. 1810532 in the amount of \$5,463,000.