Trial Court Facility Modification Advisory Committee Meeting

January 27, 2020

Call to Order and Roll Call

- Chair Call to Order and Opening Comments
- Roll Call
  - Trial Court Facility Modification Advisory Committee Chair
  - Trial Court Facility Modification Advisory Committee Members
  - Facilities Services Staff
  - Guests

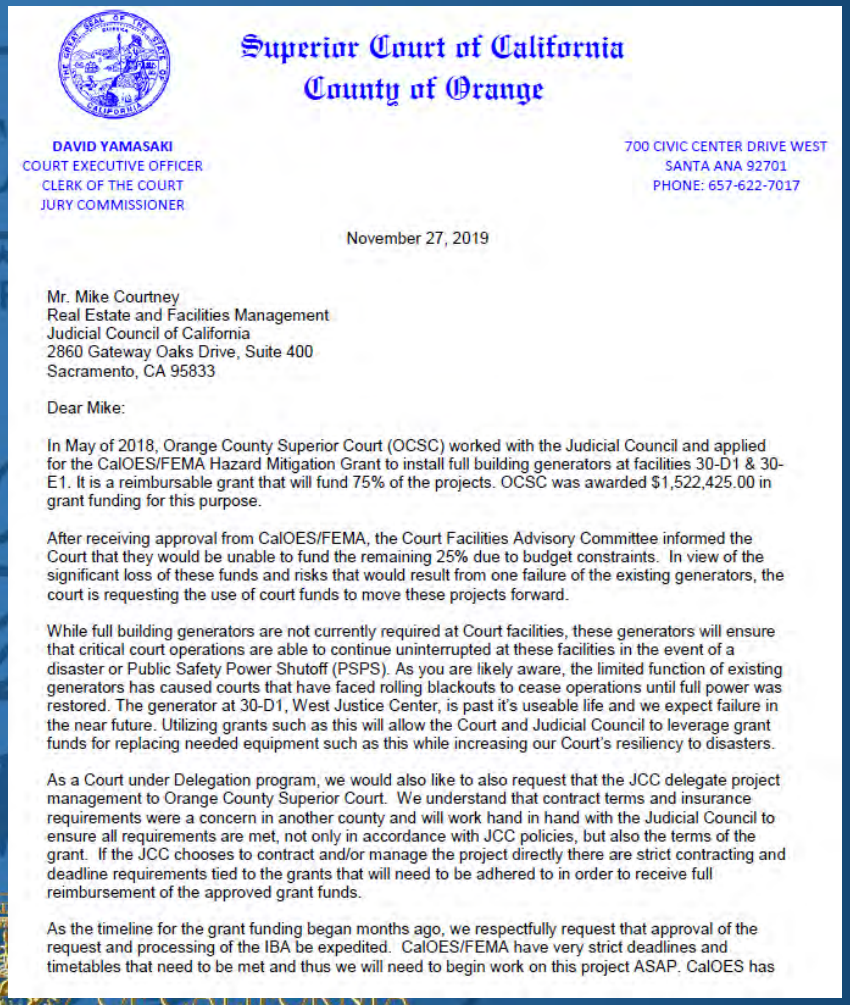
JUDICIAL COUNCIL OF CALIFORNIA

Consent Calendar

- Minutes from open meeting on December 2, 2019

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 1
Orange County Superior Court Court-Funded Request for Generators



Superior Court of California
County of Orange

DAVID YAMASAKI
COURT EXECUTIVE OFFICER
CLERK OF THE COURT
JURY COMMISSIONER

700 CIVIC CENTER DRIVE WEST
SANTA ANA 92701
PHONE: 657-622-7017

November 27, 2019

Mr. Mike Courtney
Real Estate and Facilities Management
Judicial Council of California
2860 Gateway Oaks Drive, Suite 400
Sacramento, CA 95833

Dear Mike:

In May of 2018, Orange County Superior Court (OCSC) worked with the Judicial Council and applied for the CalOES/FEMA Hazard Mitigation Grant to install full building generators at facilities 30-D1 & 30-E1. It is a reimbursable grant that will fund 75% of the projects. OCSC was awarded $1,522,425.00 in grant funding for this purpose.

After receiving approval from CalOES/FEMA, the Court Facilities Advisory Committee informed the Court that they would be unable to fund the remaining 25% due to budget constraints. In view of the significant loss of these funds and risks that would result from one failure of the existing generators, the court is requesting the use of court funds to move these projects forward.

While full building generators are not currently required at Court facilities, these generators will ensure that critical court operations are able to continue uninterrupted at these facilities in the event of a disaster or Public Safety Power Shutoff (PSPS). As you are likely aware, the limited function of existing generators has caused courts that have faced rolling blackouts to cease operations until full power was restored. The generator at 30-D1, West Justice Center, is past it's useable life and we expect failure in the near future. Utilizing grants such as this will allow the Court and Judicial Council to leverage grant funds for replacing needed equipment such as this while increasing our Court's resiliency to disasters.

As a Court under Delegation program, we would also like to also request that the JCC delegate project management to Orange County Superior Court. We understand that contract terms and insurance requirements were a concern in another county and will work hand in hand with the Judicial Council to ensure all requirements are met, not only in accordance with JCC policies, but also the terms of the grant. If the JCC chooses to contract and/or manage the project directly there are strict contracting and deadline requirements tied to the grants that will need to be adhered to in order to receive full reimbursement of the approved grant funds.

As the timeline for the grant funding began months ago, we respectfully request that approval of the request and processing of the IBA be expedited. CalOES/FEMA have very strict deadlines and timetables that need to be met and thus we will need to begin work on this project ASAP. CalOES has

requested an on-site visit for early December. As the IBA will not be standard for a delegated court, we are ready and willing to assist in any way to advance the process.

Thank you for this opportunity to partner with the Judicial Council, improve court facilities, and ensure uninterrupted service to the public.

Very truly yours,

David Yamasaki
Court Executive Officer

Cc: Darren Dang, Chief Financial and Administrative Officer
Anthony Palumbo, Court Facilities Manager
Justin Mammen, Senior Administrative Analyst

Action Item 1
Orange County Superior Court Court-Funded Request for Generators

- Cal OES/FEMA providing a 75% Grant to fund full-building generators for 2 buildings
- Court requesting approval to fund remaining 25% of cost

Location	Facility Name	Bldg. ID	Total Project Cost	Grant	Court Funding
Orange	West Justice Center	30-D1	$ 1,032,950	$ 774,713	$ 258,238
Orange	Harbor Justice Center	30-E1	$ 1,036,950	$ 777,713	$ 259,238
			$ 2,069,900	**$ 1,552,425**	**$ 517,475**

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Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

- There were 66 new Priority 1 FMs this period
- Total estimated FM Program budget share is $1,666,766

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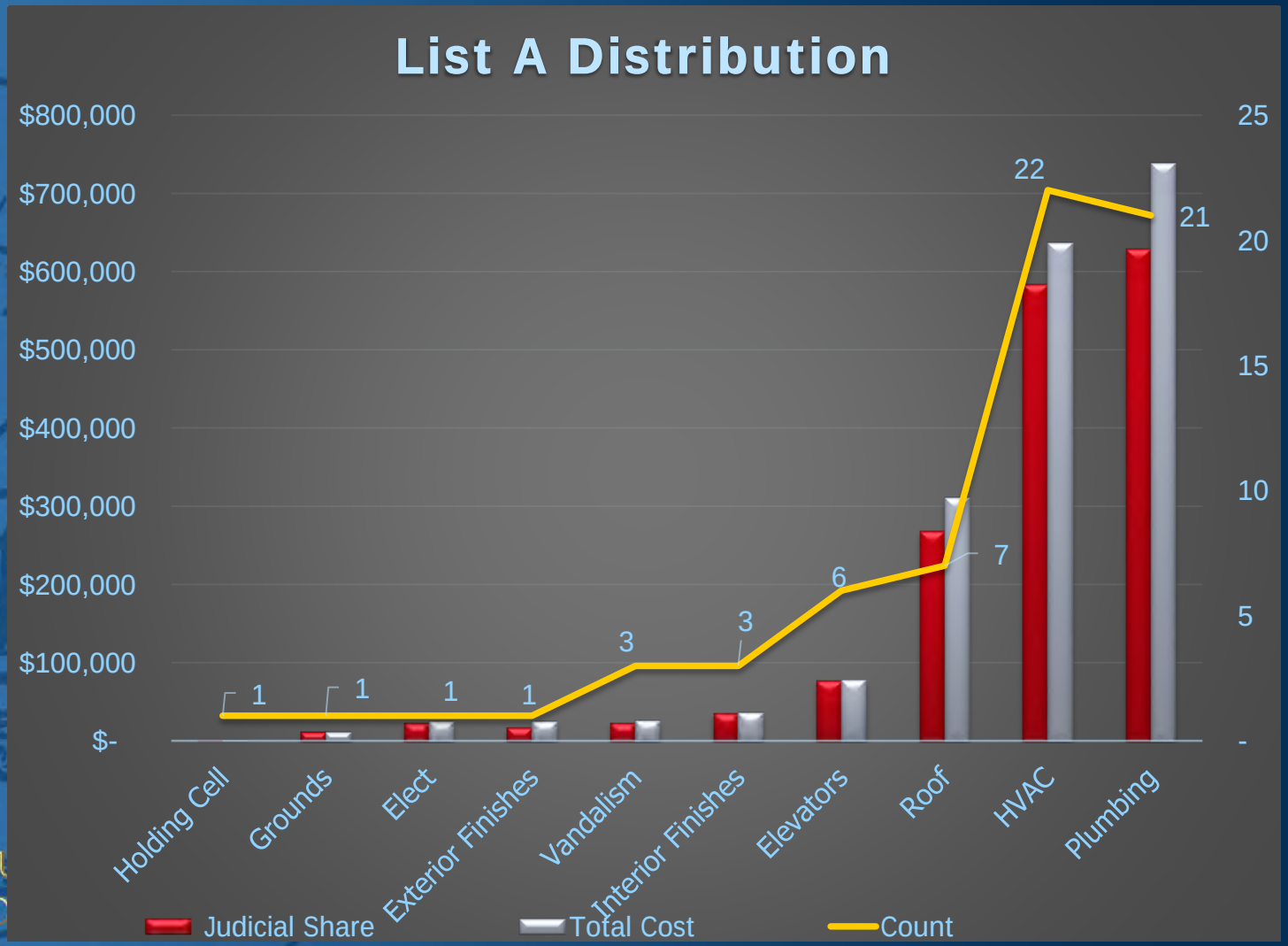
Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)



Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

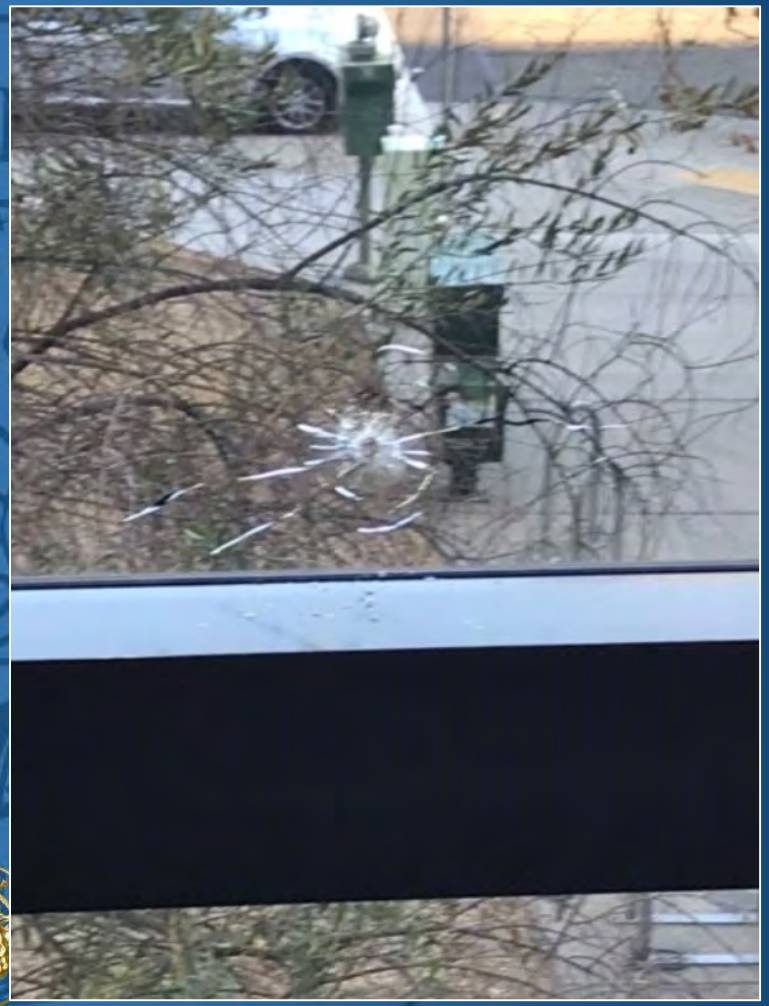
FM-0142294 San Diego Central Courthouse

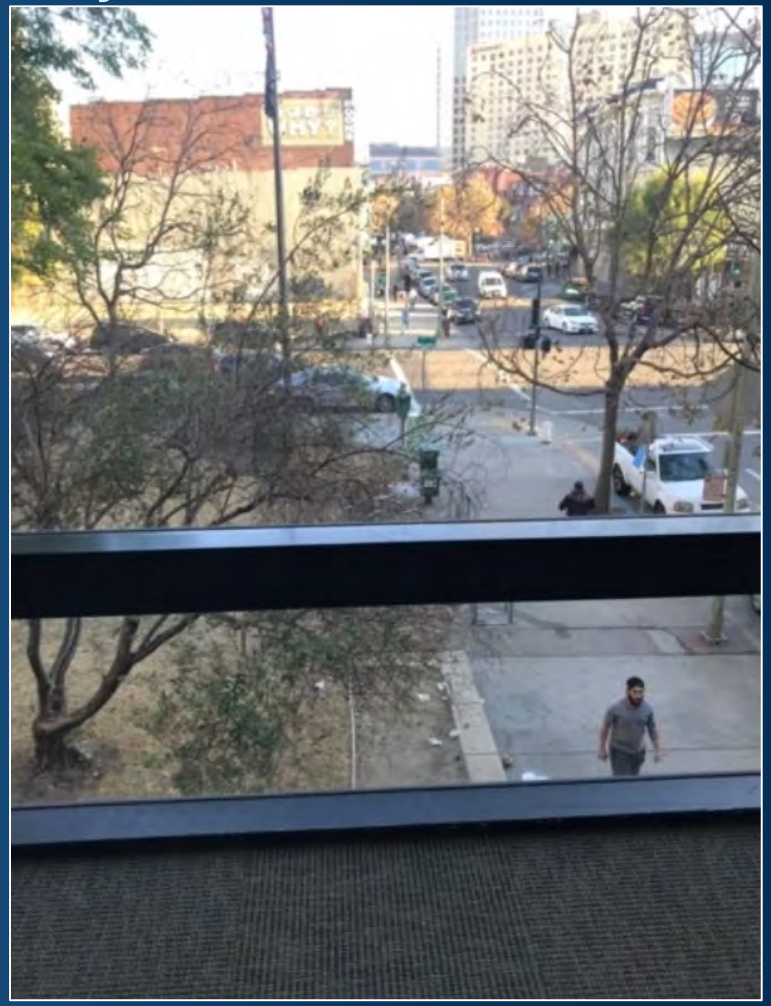
JUDICIAL COUNCIL OF CALIFORNIA

Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

FM-0142396 San Diego Central Courthouse

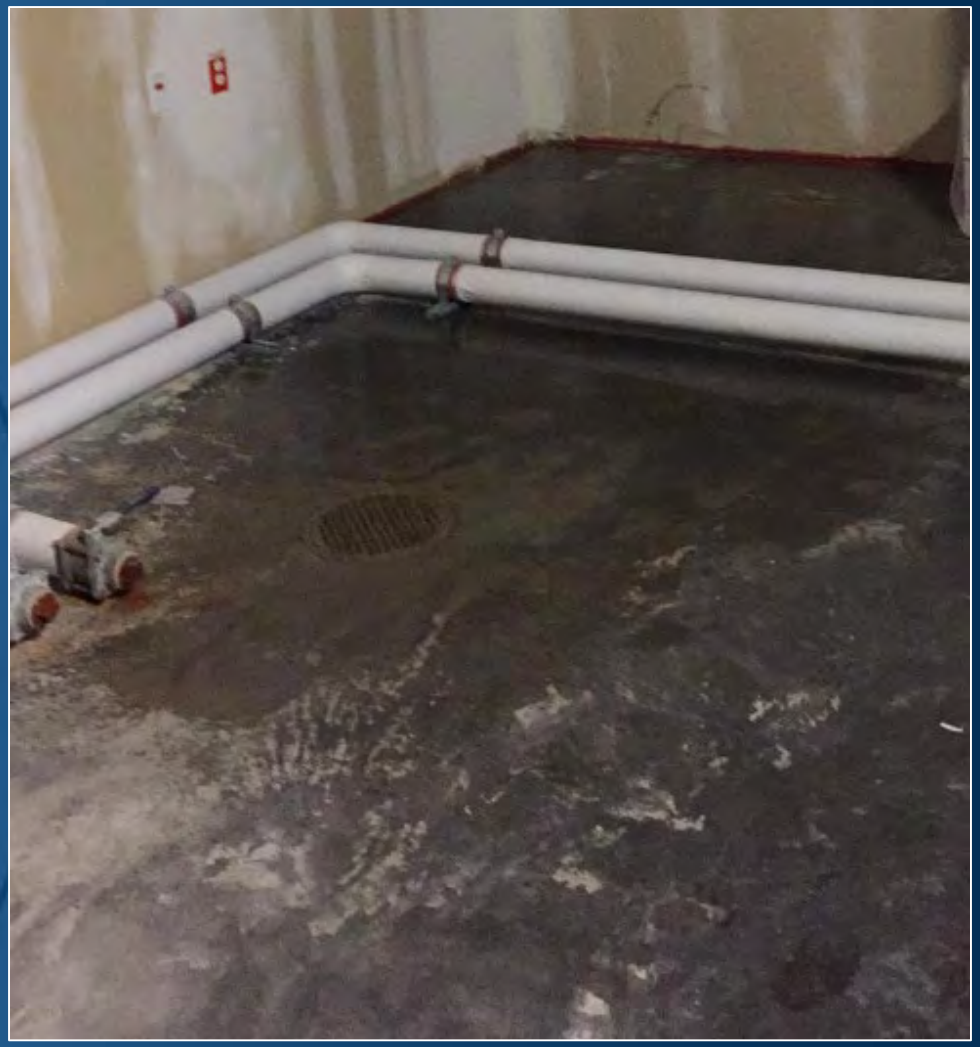
Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)
FM-0142464 Alameda Wiley W. Manuel Courthouse





Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

FM-0142522
Alameda
New East County Justice Center



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Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

FM-0142681
Burbank
Courthouse

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 2
List A – Emergency Facility Modification Funding (Priority 1)

FM-0142685
San Diego
East County
Reg'l Center

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Action Item 3
List B – Facility Modifications Less than $100K (Priority 2)

- There were 69 new FMs Less than $100K this period
- Total estimated FM Program budget share is $816,710

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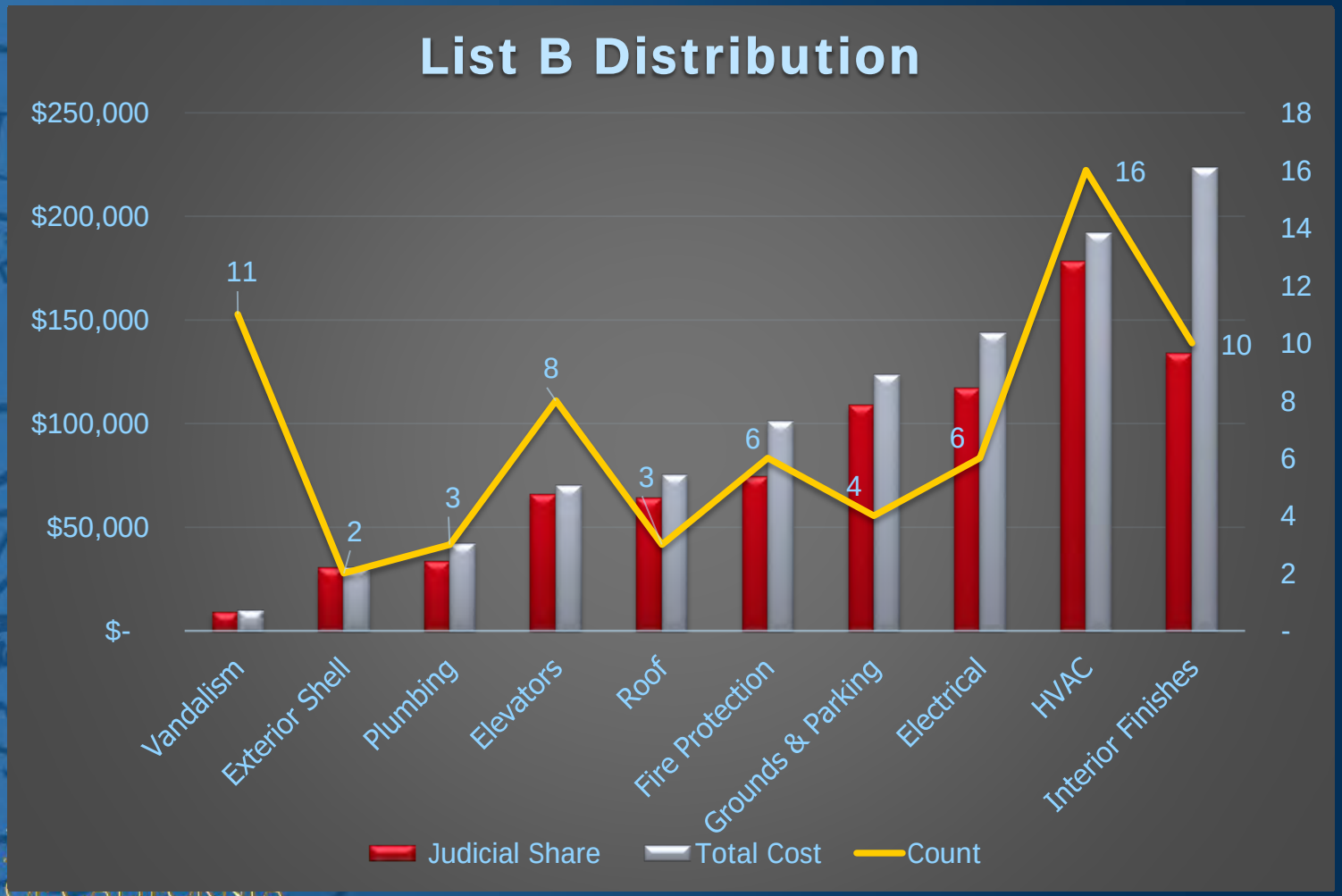
Action Item 3

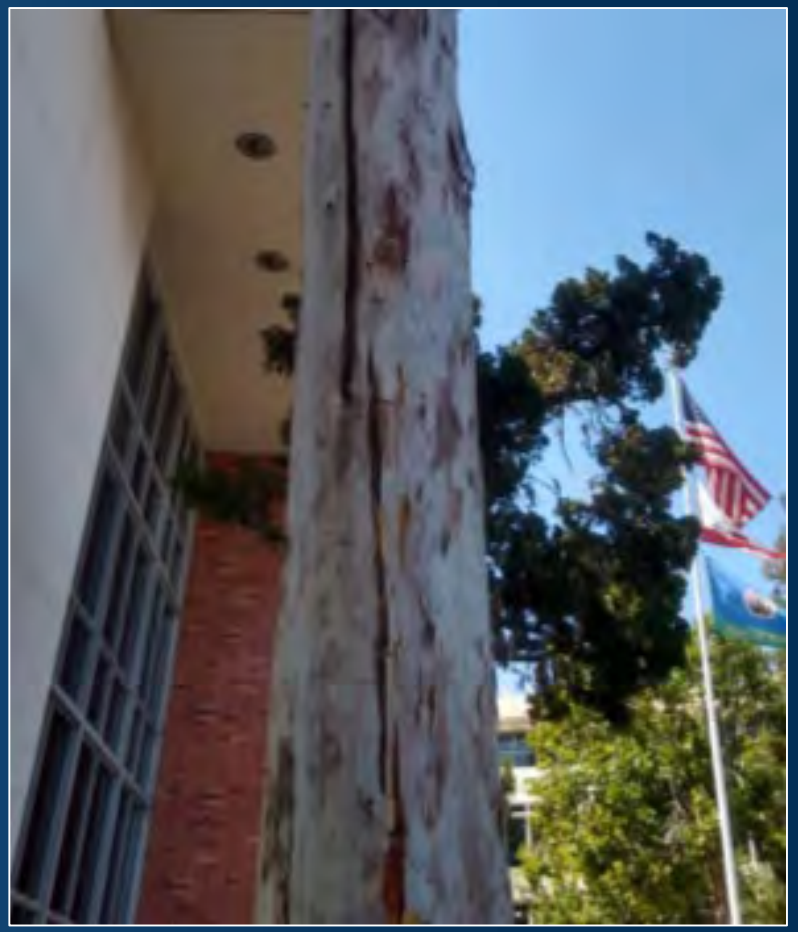
List B – Facility Modifications Less than $100K (Priority 2)



Action Item 3

List B – Facility Modifications Less than $100K (Priority 2)

FM-0142321 Los Angeles Glendale Courthouse



Action Item 3

List B – Facility Modifications Less than $100K (Priority 2)

FM-0142352
Los Angeles
Foltz
Courthouse

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 3

List B – Facility Modifications Less than $100K (Priority 2)

FM-0142353 Los Angeles Stanley Mosk Courthouse

Action Item 3

List B – Facility Modifications Less than $100K (Priority 2)

FM-0142382
Napa Historic Courthouse

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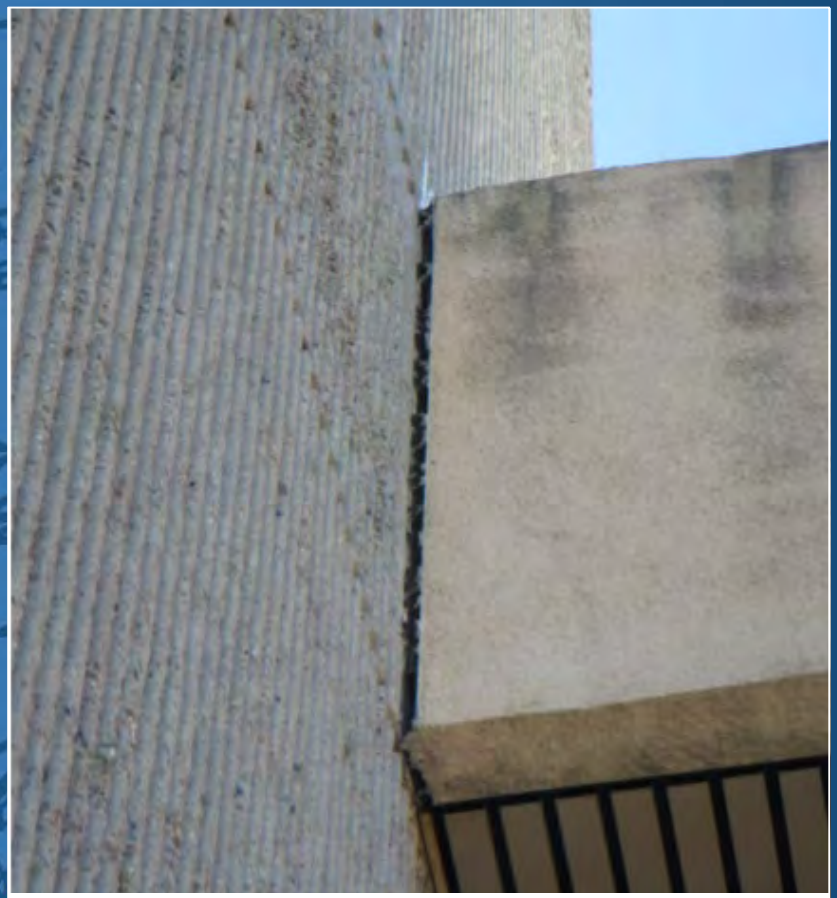
Action Item 3

List B – Facility Modifications Less than $100K (Priority 2)

FM-0142731 Orange North Justice Center



Failed joint sealant along exterior betw. concrete wall & precast panel

Cracked slab on grade in Jury Assembly Room

Action Item 4
List C – Cost Increases Over $50K

- Impacts 2 FM projects
- Total FM Value - $515,670
- Program Budget Impact - $393,606

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 4
List C – Cost Increases Over $50K

Los Angeles Norwalk– Energy Efficiency

County	Building	Bldg. ID	FM ID	Original Funded Cost	Current Cost Estimate	Amount of Increase
Los Angles	Norwalk Courthouse	19-AK1	FM-0060524	$170,363	$257,500	$87,137
Provide material and installation for approximately (1150) quantity custom prismatic acrylic diffuser to replace existing fail diffuser. Existing diffuser is 55+ years old and have not been replaced since building was built. Existing diffuser is old and bowing and is falling off the fixtures after its re-install as part of the LED retrofit project. Contractor is unable to re-install old diffuser and new diffuser is require since the new LED will be too bright without the diffusers.						
Notes: FM Program Budget Share is 85.03%, therefore cost increase to FM Budget is $74,092.						

Action Item 4
List C – Cost Increases Over $50K

Los Angeles Inglewood Energy Efficiency

County	Building	Bldg. ID	FM ID	Original Funded Cost	Current Cost Estimate	Amount of Increase
Los Angles	Inglewood Courthouse	19-F1	FM-0059232	$300,000	$728,533	$428,533
The cost of the HVAC modifications for the BMS system software were higher in the bid than originally estimated. This includes escalation from the time the project was scoped in 2014. Additional funding is required to start the HVAC modification of the project. Revised payback period is 15.8 years.						
Notes: FM Program Budget Share is 74.56%, therefore cost increase to FM Budget is $319,514						

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Action Item 5
List D – Facility Modifications over $100K

Review and approve 10 projects over $100K for total FM share of $7,013,030

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Action Item 6
Energy Efficiency Projects

- Status of existing IAA2 Energy Efficiency projects previously approved by the committee and assigned to the California Conservation Corp (CCC)
- Staff requests committee:
  1. Reallocate the ARF portion of the IAA2 funding to a subset of IAA2 projects; or
  2. Cancel the projects and revert the funding

Action Item 6
Energy Efficiency Projects

Funding Available for IAA2 JOC Delivery

FUND	FUND 9733
Enactment Year	2004
Can be allocated to different provider than CCC	Yes
Can be spent after May 2020	Yes
Total $ Encumbered for CCC Phase 2	$ 1,801,618
Total $ Available for JOC Delivery	$ 1,801,618

Action Item 6

Energy Efficiency Projects

Option 1 - Reallocate ARF portion of funding to 15 small facilities with high JC Share:

Bldg. ID	Courthouse Name	County	$ Remaining Available CFARF (9733) Amount Allocated by Bldg.	Orig. CCC Delivery Estimates ($ Total)	Current Estimate	Judicial Council Share of Project Estimate	Judicial Council Share (%)	Current Payback Period (Years)
37-F3	North County Regional Center - Annex	San Diego	$20,871	$25,311	$63,732	$63,732	100	1.5
13-A1	Imperial County Courthouse	Imperial	$52,663	$63,880	$174,236	$174,236	100	1.5
42-H1	Santa Maria Juvenile Court (new)	Santa Barbara	$7,530	$13,525	$34,054	$22,578	66.3	2.4
19-H1	Glendale Courthouse	Los Angeles	$47,006	$62,307	$156,887	$142,046	90.54	2.5
33-A1	Family Law Court	Riverside	$67,668	$81,747	$205,836	$205,836	100	2.6
43-G1	Santa Clara Courthouse	Santa Clara	$29,414	$35,660	$89,790	$89,790	100	3.0
36-C1	Fontana Courthouse	San Bernardino	$46,593	$68,057	$171,364	$142,455	83.13	3.9
09-E1	Johnson Bldg.	El Dorado	$33,312	$40,284	$101,434	$101,434	100	4.2
24-A1	Old Court	Merced	$16,992	$20,290	$51,088	$51,088	100	4.9
19-G1	Burbank Courthouse	Los Angeles	$49,457	$65,401	$164,678	$149,462	90.76	5.1
28-A1	Criminal Court Building	Napa	$44,018	$52,822	$133,003	$133,003	100	5.4
37-C1	Kearny Mesa Court	San Diego	$38,770	$46,791	$117,818	$117,818	100	5.7
43-A2	Hall of Justice (West)	Santa Clara	$65,154	$78,202	$196,909	$196,909	100	5.8
07-A3	Bray Courts	Contra Costa	$39,317	$55,073	$138,672	$118,592	85.52	6.0
44-A1	Main Courthouse	Santa Cruz	$35,175	$42,486	$93,470	$92,638	99.11	7.4
		Total:	**$593,940**	**$751,836**	**$1,892,973**	**$1,801,618**		

Action Item 7
TCFMAC 2020 Annual Agenda

- Refer meeting materials for draft 2020 annual agenda

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 8
FY 2019-20 Quarter 1 & 2 Reports

- Refer to meeting materials for FY 2019/20 Q1 and Q2 reports

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 9
Leak Detection Reports for Foltz, Compton and Van Nuys

- Refer to meeting materials for Leak Detection Reports
- Approve design costs for leak detection projects for the Foltz, Compton, and Van Nuys courthouses

FM No.	Location	Facility Name	Bldg. ID	Preliminary Estimate	JC Share ($)	JC Share (%)
FM-0142549	Los Angeles	Clara Shortridge Foltz Criminal Justice Center	19-L1	$ 65,500	$ 45,057	68.79
FM-0142553	Los Angeles	Compton Courthouse	19-AG1	$ 55,200	$ 36,504	66.13
FM-0142554	Los Angeles	Van Nuys Courthouse West	19-AX2	$ 82,200	$ 66,155	80.48
				$202,900	**$147,716**	

Action Item 9
Leak Detection Reports for Foltz, Compton and Van Nuys

Leak Monitoring Systems

Clara Shortridge Foltz Criminal Justice Center, Van Nuys Courthouse, and Compton Courthouse




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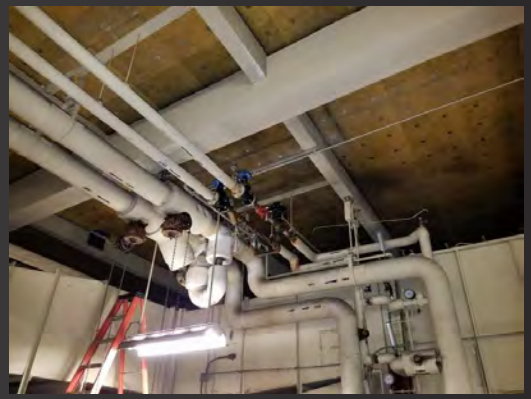


Clara Shortridge Foltz Criminal Justice Center

JUDICIAL COUNCIL OF CALIFORNIA

Clara Shortridge Foltz Criminal Justice Center

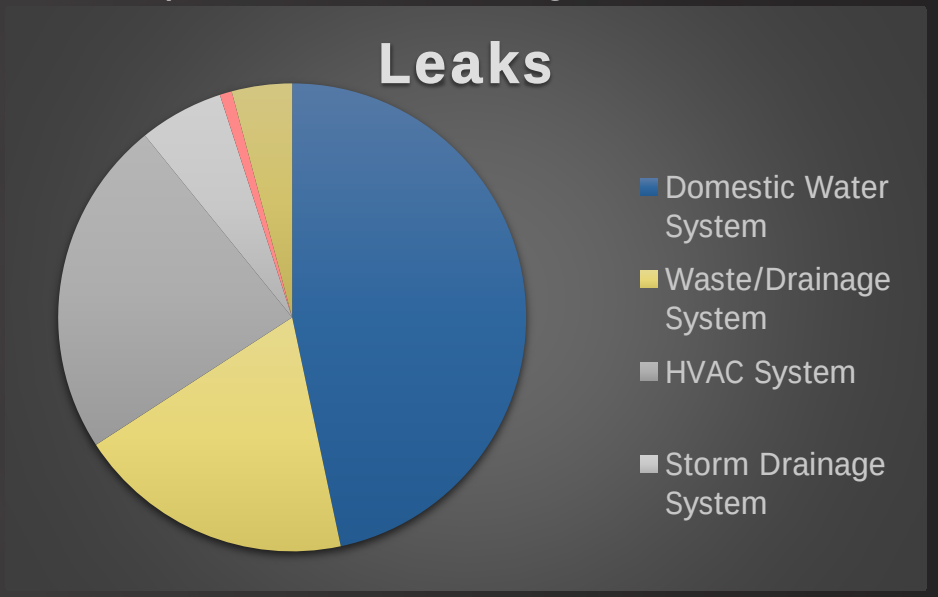
Background

- The Judicial Council of California requested to assess the existing mechanical and plumbing pressurized systems for the purpose of preventing and/or mitigating water leaks at its courthouses. Judicial Council of California experienced a catastrophic valve burst that went undetected over the weekend that caused significant damage to property.
- Glumac performed a site observation of the existing Foltz Courthouse to become familiar with the existing mechanical hydronic system and plumbing system infrastructure and layout. Glumac assessed the general condition of the existing mechanical and plumbing systems, to provide feedback on the conceptual requirements of a leak detection and monitoring system for chilled water, heating hot water, domestic cold water and domestic hot water systems.
- The existing Foltz Courthouse is a 19-story building + 2 sub level (Parking and Service Levels) located in Downtown Los Angeles, built in 1973. The building has an approximate floor area of 850,000 GSF.
- Original as-built drawings dated 1973 were provided for the mechanical and plumbing systems for Glumac's reference.

Clara Shortridge Foltz Criminal Justice Center

Leak History

- Approximately 120 P1s since June 2011 to repair leaks and damage the leaks have caused.
  - 47% – Domestic Water System
  - 19% – Waste/Drainage System
  - 23% – HVAC System
  - 6%– Storm Drainage System
  - 1% – Generator (oil)
  - 4% – Fire Protection System
- Cost: Approximately $3.1 million



JUDICIAL COUNCIL OF CALIFORNIA

Assessment

- The building's plumbing and HVAC hydronic systems are old and have risk of water leak event.
- The main piping is rusted and shows sign of deterioration.
- Mechanical and plumbing equipment has exceeded its life expectancy and show leaks.
- Glumac investigated different types of leak detection system that are able to prevent water damage.
- Advantages and disadvantages for the different type of leak detection systems applicable to the type of the structure are provided.

Recommendations

A follow up site visit and meeting was held on January 9, 2020 to discuss the concerns about reliability, cost and scope of the different types of leak detection systems. The recommendations reflect those discussions.

- Type D: Direct Digital Control (DDC) Devices will be utilized and connected to existing Building Management System (BMS). This option provides the most cost-effective solution to avoid subscription cost compared to the smart meters. This type of device can detect, evaluate and is capable of automatic shut-off providing a type of leak detection system that is able to prevent property damage. This type of system is more reliable and has a better accuracy compared to the other devices.
- Also, the quantities of leak detection devices will be limited to main branch, riser and main service piping for domestic cold water, hot water, chilled water and heating hot water. One device will cover/serve multiple areas with limited isolation capability.

Clara Shortridge Foltz Criminal Justice Center

Recommendations

- Provide DDC flow meter at risers/main branches for domestic cold water, hot water, chilled water and heating hot water without shutoff valve and automatic shutdown. The device will serve multiple restrooms.
- Provide flowmeter and automatic shutoff valve at main service piping for domestic cold water, hot water, chilled water and heating hot water without shutoff valve and automatic shutdown. This will have the ability to automatically shut down when a major alarm was not address within a certain time period.
- Provide floor sensor in restrooms and locate as close as possible to the door without affecting accessibility. Provide tamper proof cover. Provide cable sensing device under door threshold if possible, in lieu of floor sensors.
- Provide cable sensing device at the perimeter and ceiling above data rooms, file/evidence rooms, electrical, LAN and other critical spaces.

Clara Shortridge Foltz Criminal Justice Center

Rough Order of Magnitude Cost

ROM COST SUMMARY							
SYSTEM	DECVICE TYPE	INSTALL COST	YEARLY COST	RISK LEVEL	IMPLEMENTA-TION IMPACT	IMPLEMENTA-TION PRIORITY	REMARKS
PLUMBING DOMESTIC COLD & HOT WATER PIPING SYSTEM (OPTION 2)	DDC DEVICES	$ 488,284	$95,874	HIGH	HIGH	HIGH	
MECHANICAL CHILLED & HEATING HOT WATER SYSTEM (OPTION 2)	DDC DEVICES	$ 247,706	$ 28,794	HIGH	HIGH	HIGH	
RESTROOMS & CUSTODIAN	DDC DEVICE SENSORS & CABLE TYPES	$1,247,760	$133,980	HIGH	HIGH	HIGH	
MECHANICAL EQUIPENT ROOM (BASELINE)	WATER SENSORS	$ 271,008	$ 4,500	HIGH	HIGH	HIGH	
FILE/EVIDENCE ROOM (BASELINE)	CABLE DETECTION TYPE	$ 97,830	$ 1,500	MED	HIGH	MED	
SERVER & IT ROOMS (BASELINE)	CABLE DETECTION TYPE	$ 61,734	$ 700	MED	HIGH	MED	
TOTAL		$2,414,322	$265,348				

OF CALIFORNIA

Clara Shortridge Foltz Criminal Justice Center

Cut Sheets

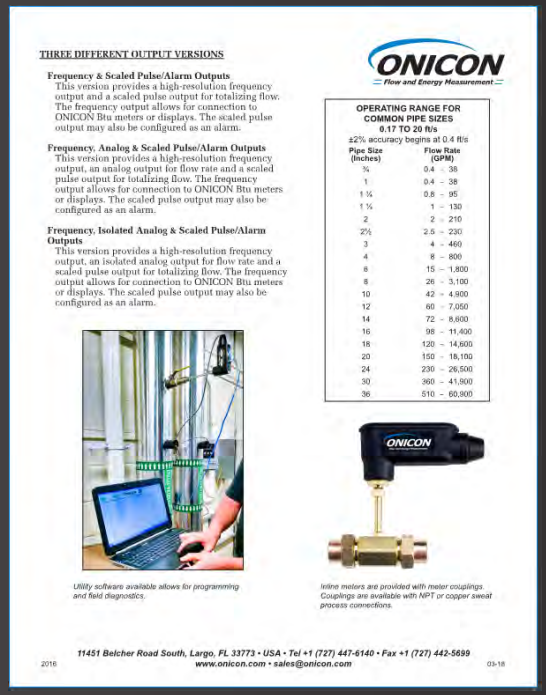

TYPE-D BMS FLOWMETER

F-1000 Series Turbine Flow Meters

Chilled Water • Hot Water • Domestic Water

ONICON's F-1000 Series is a family of insertion and inline turbine flow meters that provide accurate measurement over a wide flow range in pipe sizes ranging from ¾" to 72" in diameter. They are an excellent value when measuring water flow in clean closed loop systems.

ONICON
Flow and Energy Measurement


THREE DIFFERENT OUTPUT VERSIONS

Frequency & Scaled Pulse/Alarm Outputs
This version provides a high-resolution frequency output and a scaled pulse output for totalizing flow. The frequency output allows for connection to ONICON Btu meters or displays. The scaled pulse output may also be configured as an alarm.

Frequency, Analog & Scaled Pulse/Alarm Outputs
This version provides a high-resolution frequency output, an analog output for flow rate and a scaled pulse output for totalizing flow. The frequency output allows for connection to ONICON Btu meters or displays. The scaled pulse output may also be configured as an alarm.

Frequency, Isolated Analog & Scaled Pulse/Alarm Outputs
This version provides a high-resolution frequency output, an isolated analog output for flow rate and a scaled pulse output for totalizing flow. The frequency output allows for connection to ONICON Btu meters or displays. The scaled pulse output may also be configured as an alarm.

ONICON
Flow and Energy Measurement

OPERATING RANGE FOR COMMON PIPE SIZES
0.17 TO 20 ft/s
±2% accuracy begins at 0.4 ft/s

Pipe Size (Inches)	Flow Rate (GPM)
¾	0.4 – 38
1	0.4 – 38
1 ¼	0.8 – 95
1 ½	1 – 130
2	2 – 210
2½	2.5 – 230
3	4 – 460
4	8 – 800
6	15 – 1,800
8	26 – 3,100
10	42 – 4,900
12	60 – 7,050
14	72 – 8,600
16	98 – 11,400
18	120 – 14,600
20	150 – 18,100
24	230 – 26,500
30	360 – 41,500
36	510 – 60,900

Utility software available allows for programming and field diagnostics.

Inline meters are provided with meter couplings. Couplings are available with NPT or copper sweat process connections.

11451 Belcher Road South, Largo, FL 33773 • USA • Tel +1 (727) 447-6140 • Fax +1 (727) 442-5699
www.onicon.com • sales@onicon.com

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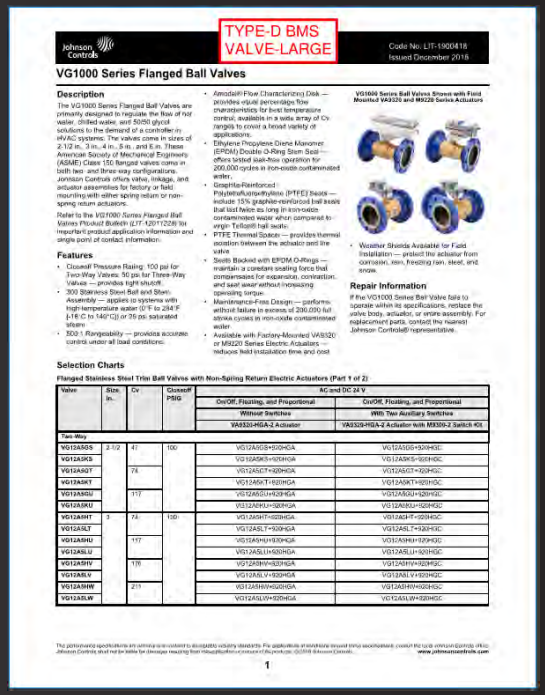
Johnson Controls

TYPE-D BMS VALVE-LARGE

Code No. LIT-1900416
Issued December 2016

VG1000 Series Flanged Ball Valves

Description

The VG1000 Series Flanged Ball Valves are primarily designed to regulate the flow of hot water, chilled water, and 50/50 glycol solutions to the demand of a controller in HVAC systems. The valves come in sizes of 2-1/2 in., 3 in., 4 in., 5 in., and 6 in. These American Society of Mechanical Engineers (ASME) Class 150 flanged valves come in both two- and three-way configurations. Johnson Controls offers valve, linkage, and actuator assemblies for factory or field mounting with either spring return or non-spring return actuators.

Refer to the *VG1000 Series Flanged Ball Valves Product Bulletin* (LIT-12017228) for important product application information and single point of contact information.

- Amodal® Flow Characterizing Disk — provides equal percentage flow characteristics for best temperature control, available in a wide array of Cv ranges to cover a broad variety of applications.
- Ethylene Propylene Diene Monomer (EPDM) Double O-Ring Stem Seal — offers tested leak-free operation for 200,000 cycles in non-oxide contaminated water.
- Graphite-Reinforced Polytetrafluoroethylene (PTFE) Seats — include 15% graphite-reinforced ball seats that last twice as long in non-oxide contaminated water when compared to virgin Teflon® ball seats.
- PTFE Thermal Spacer — provides thermal isolation between the actuator and the valve.
- Seals Backed with EPDM O-Rings — maintain a constant sealing force that compensates for expansion, contraction, and seat wear without increasing operating torque.
- Maintenance-Free Design — performs without failure in excess of 200,000 full stroke cycles in non-oxide contaminated water.
- Available with Factory-Mounted VA9320 or M9220 Series Electric Actuators — reduces field installation time and cost.

Features

- Closeoff Pressure Rating: 100 psi for Two-Way Valves; 50 psi for Three-Way Valves — provides tight shutoff.
- 300 Stainless Steel Ball and Stem Assembly — applies to systems with high-temperature water (0°F to 284°F [-18°C to 140°C]) or 35 psi saturated steam.
- 300:1 Rangeability — provides accurate control under all load conditions.

VG1000 Series Ball Valves Shown with Field Mounted VA9320 and M9220 Series Actuators

- Weather Shields Available for Field Installation — protect the actuator from corrosion, rain, freezing rain, sleet, and snow.

Repair Information

If the VG1000 Series Ball Valve fails to operate within its specifications, replace the valve body, actuator, or entire assembly. For replacement parts, contact the nearest Johnson Controls® representative.

Selection Charts

Flanged Stainless Steel Trim Ball Valves with Non-Spring Return Electric Actuators (Part 1 of 2)

Valve	Size, in.	Cv	Closeoff PSIG	AC and DC 24 V	
				On/Off, Floating, and Proportional	On/Off, Floating, and Proportional
				Without Switches	With Two Auxiliary Switches
				VA9320-HGA-2 Actuator	VA9320-HGA-2 Actuator with M9300-Z Switch Kit
Two-Way					
VG12A5GS	2-1/2	47	100	VG12A5GS+520HGA	VG12A5GS+520HGC
VG12A5KS				VG12A5KS+520HGA	VG12A5KS+520HGC
VG12A5GT		74		VG12A5GT+520HGA	VG12A5GT+520HGC
VG12A5KT				VG12A5KT+520HGA	VG12A5KT+520HGC
VG12A5GU		117		VG12A5GU+520HGA	VG12A5GU+520HGC
VG12A5KU				VG12A5KU+520HGA	VG12A5KU+520HGC
VG12A5HT	3	74	100	VG12A5HT+520HGA	VG12A5HT+520HGC
VG12A5LT				VG12A5LT+520HGA	VG12A5LT+520HGC
VG12A5HU		117		VG12A5HU+520HGA	VG12A5HU+520HGC
VG12A5LU				VG12A5LU+520HGA	VG12A5LU+520HGC
VG12A5HV		176		VG12A5HV+520HGA	VG12A5HV+520HGC
VG12A5LV				VG12A5LV+520HGA	VG12A5LV+520HGC
VG12A5HW		211		VG12A5HW+520HGA	VG12A5HW+520HGC
VG12A5LW				VG12A5LW+520HGA	VG12A5LW+520HGC

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, contact the Customer Application Center. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products. ©2016 Johnson Controls.

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1

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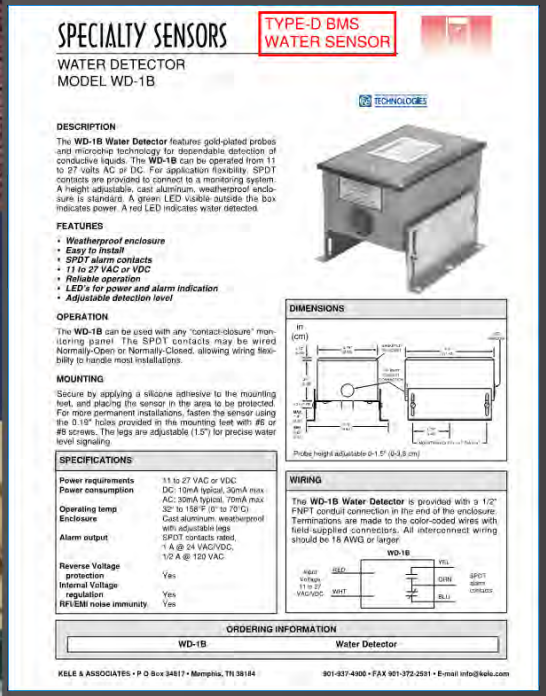
Cut Sheets



SPECIALTY SENSORS

TYPE-D BMS WATER SENSOR

WATER DETECTOR
MODEL WD-1B

TECHNOLOGIES

DESCRIPTION

The **WD-1B Water Detector** features gold-plated probes and microchip technology for dependable detection of conductive liquids. The **WD-1B** can be operated from 11 to 27 Volts AC or DC. For application flexibility, SPDT contacts are provided to connect to a monitoring system. A height adjustable, cast aluminum, weatherproof enclosure is standard. A green LED visible outside the box indicates power. A red LED indicates water detected.

FEATURES

- ***Weatherproof enclosure***
- ***Easy to install***
- ***SPDT alarm contacts***
- ***11 to 27 VAC or VDC***
- ***Reliable operation***
- ***LED's for power and alarm indication***
- ***Adjustable detection level***

OPERATION

The **WD-1B** can be used with any "contact-closure" monitoring panel. The SPDT contacts may be wired Normally-Open or Normally-Closed, allowing wiring flexibility to handle most installations.

MOUNTING

Secure by applying a silicone adhesive to the mounting feet, and placing the sensor in the area to be protected. For more permanent installations, fasten the sensor using the 0.10" holes provided in the mounting feet with #6 or #8 screws. The legs are adjustable (1.5") for precise water level signaling.

DIMENSIONS

SPECIFICATIONS

Power requirements	11 to 27 VAC or VDC
Power consumption	DC: 10mA typical, 30mA max AC: 30mA typical, 70mA max
Operating temp	32° to 158°F (0° to 70°C)
Enclosure	Cast aluminum, weatherproof with adjustable legs
Alarm output	SPDT contacts rated, 1 A @ 24 VAC/VDC, 1/2 A @ 120 VAC
Reverse Voltage protection	Yes
Internal Voltage regulation	Yes
RFI/EMI noise immunity	Yes

WIRING

The **WD-1B Water Detector** is provided with a 1/2" FNPT conduit connection in the end of the enclosure. Terminations are made to the color-coded wires with field supplied connectors. All interconnect wiring should be 18 AWG or larger.

ORDERING INFORMATION

WD-1B	Water Detector

KELE & ASSOCIATES • P O Box 34817 • Memphis, TN 38184 901-937-4900 • FAX 901-372-2531 • E-mail info@kele.com

TYPE-D BMS WATER SENSOR
VANDAL RESISTANT

"VR" SERIES-
Vandal Resistant with "Wash Down" Mode.

WATER ALERT®
WATER LEAK DETECTION SYSTEMS
"VR" Models

-**2 Models** *with optional accessories to meet your specific requirements.*

- **Specifically designed for use in public and employee restrooms.** *(or any other areas such as laboratories and clean rooms that require frequent cleaning).*

- *Vandal and corrosion resistant design.*

- *"WashDown" mode enables the area to be cleaned, without activating the Water Alert.*

-*All units tested 3 times during manufacture, and come with a* **5 Year Limited Warranty.** Made in the USA.

-**Simple installation** *using instructions furnished with all equipment, normally done by maintenance personnel.*

- *In wall or surface conduit wire entry.*

Respond in seconds...not hours!

MODEL VR-4 -

Water Alert detector provides isolated dry relay contacts [DPDT] which transfer and hold when activated. Self-resets.

Powering options -
- 12 to 24 Volts AC or DC (Power Supply available - Model PSV-4 see Pg. 25)

Audible alarm -
- None

Relay contacts -
- DPDT (2- Form C-Low Voltage)
- 28 VDC@ 1 amp. MAX.

(For high power applications see Pg. 26 model RR-WM)

Power draw =
- 25mA @ 24VAC.

MODEL VR-2100 -

Water Alert detector used to tie-into all Dorlen Series 2100 Monitors

Powering options -
- Powered from Series 2100 monitor. (Pg. 11)

Audible alarm -
- None

Relay contacts -
- None

Test feature-
- Yes

Power draw -
- 20mA @ 9vdc

9

WATER ALERT®
WATER LEAK DETECTION SYSTEMS "VR" Models

PRINCIPLE OF OPERATION AND CONSTRUCTION "VR" MODELS

5 YEAR

External View

Internal View

10

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Cut Sheets

RLE Technologies

TYPE-D BMS SENSING CABLE

SC

Leak Detection Sensing Cable

Monitor. Integrate. Alert. Peace of Mind.

Applications

- Place around the perimeter of rooms
- Serpentine under raised floors
- Install inside drop ceilings
- Affix to the bottom of pipes
- Secure around floor drains and under plumbing fixtures
- Encapsulate storage tanks and cooling equipment

Key Features

- Detects any conductive fluid
- Designed to eliminate false alarms
- Fast drying; quickly resets to detect the next leak
- Plenum (CL2P) rated
- Durable yet flexible design
- Patented since 2000
- Available in standard and custom lengths with pre-installed twist-lock connectors

All of our sensing cables are manufactured and assembled in the USA.

Patented Protection From Even The Smallest Leaks

RLE's sensing cable (SC) reliably detects water and other conductive fluid leaks, protecting facilities from damage and downtime.

What Sets RLE's Sensing Cable Apart?

- **Leaders in the industry.** RLE has designed and manufactured leak detection for more than 30 years and over 14 million feet of our patented SC is currently installed in facilities worldwide.
- **Encapsulate at-risk areas and sources of leaks.** Conductive fluid contact at any point along the length of the cable triggers an alarm condition.
- **Engineered for reliability.** Sensing wires are covered with a non-conductive polymer mesh; dirt, dust, and contact with metal will not generate false alarms.
- **Constant oversight.** Four wire construction allows the system to continually monitor the cable and identify damaged or disconnected cables.

SeaHawk

RLE Technologies

BMS-LD3Z

Three Zone Leak Detection For System Integration

Monitor. Integrate. Alert. Peace of Mind.

Applications

Pair with RLE's SeaHawk sensing cables and spot detectors to monitor for conductive fluid and caustic chemical leaks and integrate this information directly into a BMS or BAS.

Key Features

- No user interface or separate software required - integrates directly with existing BMS and alarm monitoring systems
- Enclosure mounts in a panel, on a DIN rail, or on a wall
- Incorporates RLE's patented leak detection technology into any existing BMS or alarm monitoring system

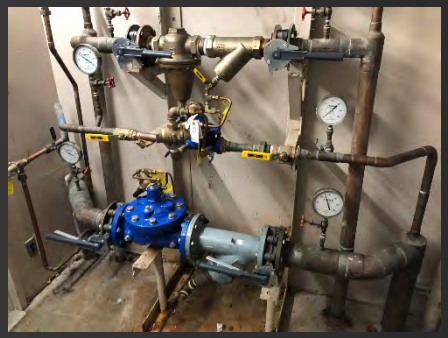
Three Zones of Integrated Leak Detection

The BMS-LD3Z provides three zones of RLE's patented leak detection that directly integrates via protocols into any building management system (BMS) or alarm monitoring system.

What Sets The BMS-LD3Z Apart?

- **Designed specifically for system integration,** the BMS-LD3Z leverages robust protocol communications to communicate with any Modbus RTU or BACnet MS/TP system.
- **Notifies users quickly when an alarm condition is met.**
- **Zone leak detection** system alarms when water comes into contact with the attached sensing cable or spot detector. It is the right fit for spaces where sensing cables and spot detectors are visible so leaks can easily be located.
- **A supervised system,** the controller continuously monitors the cable for leaks, breaks, and disconnects and sends an alarm notification when one is detected.

Raptor



Van Nuys Courthouse

JUDICIAL COUNCIL OF CALIFORNIA

Van Nuys Courthouse

Background

- An assessment of the pressurized water systems at the Van Nuys Courthouse (both East & West Buildings) was conducted by Salas O'Brien. This presentation summarizes the findings of that assessment.
- Pressurized water systems include both hydronic water (chilled water and heating hot water for cooling/heating building) and the domestic water system.
- Site observations were conducted to assess the current condition of the existing hydronic and domestic water infrastructure, and determine which systems may be susceptible to potential leaks.
- Assessment also investigated the best methods for implementing a leak detection system.
- Van Nuys Courthouse consists of (2) Buildings
  - West Building has 10 stories of occupied spaces, in addition to a basement and mechanical penthouse.
  - East Building has 7 stories of occupied spaces, in addition to a basement.
- The Courthouse is approximately 430,000 square feet, including both buildings.
- East Building constructed in 1963, and contains hazardous materials.
- West Building constructed in 1985.

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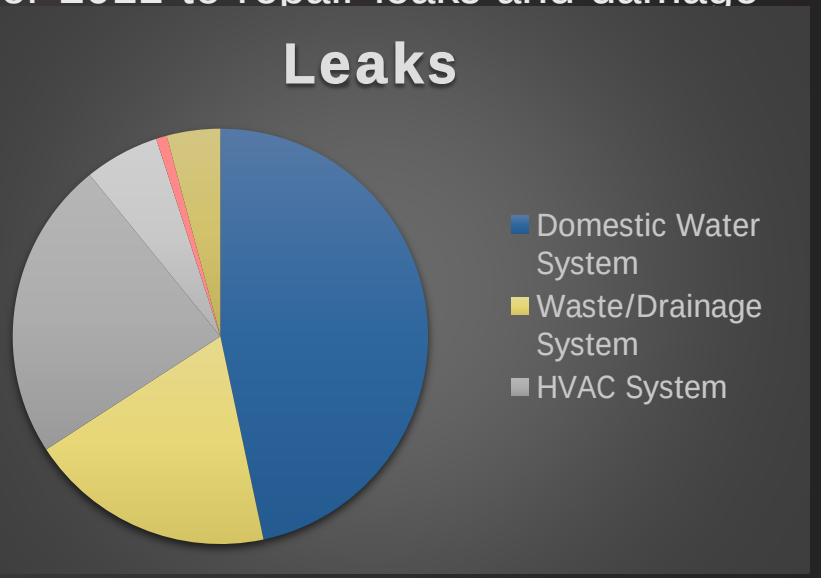
Van Nuys Courthouse

Leak History

- Approximately 79 P1s since September 2011 to repair leaks and damage the leaks have caused.
  - 42% – Domestic Water System
  - 28% – Waste/Drainage System
  - 6% – HVAC System
  - 14%– Storm Drainage System
  - 1% – Fuel Tank
  - 9% – Fire Protection System
- Cost: Approximately $3.5 million



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Van Nuys Courthouse

Assessment – East Building

- Two sites visits conducted—10/16/2019 & 01/09/2020
- 10/16/2019 site investigation concluded the following:
  - ✓ Hydronic water piping infrastructure, including main riser and branch lines in mechanical rooms, have reached their end of useful life (>55 years old); however, there are no apparent leaks.
  - ✓ Chilled water generated in West Building penthouse, and supplied through an underground utility tunnel to East Building. No means of isolating buildings.
  - ✓ Mechanical equipment for heating hot water (boilers and pumps) are relatively new and in good condition, located in East Building basement.
  - ✓ Domestic water pressure reducing stations serve multiple floors, with no means of isolating floors in the event of a leak.
  - ✓ New Building Management System currently being designed
  - ✓ Cost effective opportunities exist to monitor leaks in the riser and branch hydronic piping, as well as monitor flows in the domestic water distribution piping, to implement a building wide leak detection system.
- Domestic water system most susceptible to leaks – recently domestic water gate valves have failed behind walls, causing damage.
- Several leaks have also occurred in the sanitary drainage system (floor/roof drains).

Van Nuys Courthouse

Assessment – West Building

- 10/16/2019 site investigation concluded the following:
  - ✓ Hydronic water piping infrastructure, including main riser and branch lines in mechanical rooms, appear to be in good condition.
  - ✓ Mechanical equipment for chilled water (chiller and pumps), located in the penthouse visually appear to be in good condition and there have been no historical leaks associated with this system. Equipment reaching end of useful life based on age.
  - ✓ Heating hot water supplied to West Building via utility tunnel.
  - ✓ Domestic water pressure reducing stations serve multiple floors and no means of effectively isolating floors.
  - ✓ New Building Management System currently being designed
  - ✓ Cost effective opportunities exist to monitor leaks in the riser and branch hydronic piping, as well as monitor flows in the domestic water distribution piping, to implement a building wide leak detection system.
- Domestic water system most susceptible to leaks – recently domestic water gate valves have failed behind walls, causing damage.
- Leaks have also occurred in the sanitary drainage system (floor/roof drains).
- No major leaks in hydronic piping.
- During the 01/09/2020 site visit with JCC, the conceptual design was discussed with respect to reliability, effectiveness and cost of the system. The final recommendations are presented on the following slides.

Van Nuys Courthouse

Hydronic Water (Chilled Water 'CHW' & Heating Hot Water 'HHW')

- Add water sensing cables at each CHW & HHW floor penetration.
- Add water sensing cables on the underside of each CHW & HHW branch piping.
- Add water sensing cables around the perimeter of each chiller, boiler and pump in the mechanical penthouse and basement.
- Add actuated shut off valves at the CHW & HHW branch lines.
- Add a three way valve and bypass piping, in the utility tunnel, so the CHW & HHW services can be isolated for each building.
- Integrate new valves, water sensing cables and automatic shutdown sequences into new BMS.

Domestic Water

- Add actuated shut off valve, and flow meters, to each domestic water branch line, serving each floor.
- Add flow meter to main domestic water line, for both buildings.
- Integrate flow meters and valves into BMS, so building domestic water flows can be trended and monitored, and automatic shutoff to individual floors can occur in the event of a prolonged leak.

Additionally, water sensing cables should be added above all sensitive areas—including IT/server rooms and evidence rooms

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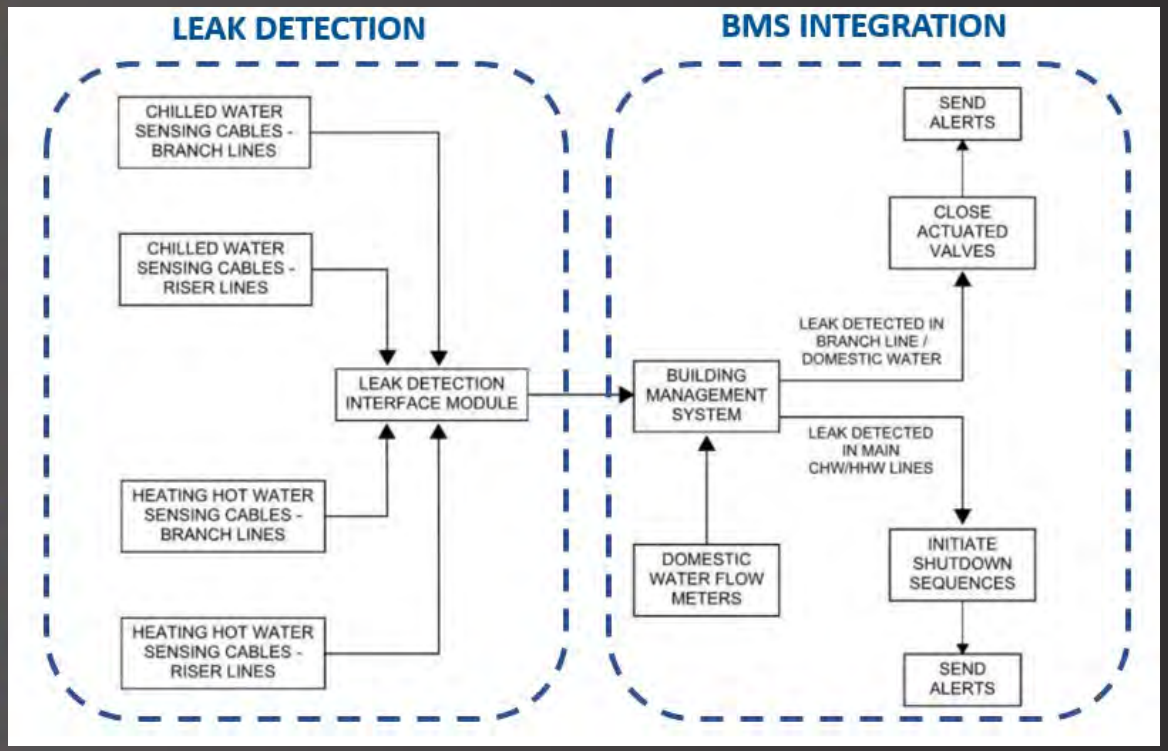
Van Nuys Courthouse



- A reliable (Building Management System) BMS is critical for leak detection system, in order to trend flows and initiate automatic shutdown sequences of particular equipment in the event of a leak. Currently, a new BMS system is being designed for Van Nuys, which the leak detection system will be integrated into.

- Important to note, the leak detection system will not prevent leaks, but provide early detection and alert key facilities personnel to minimize damages resulting from the leak.

Van Nuys Courthouse

Rough Order of Magnitude Cost

Judicial Council of California
Water Leak Detection Study - Van Nuys Courthouse
Rough Order of Magnitude Cost Estimate

Item Description	Quantity	Unit	Unit Cost	TOTAL
Abatement (East Building only)				
Abatement of existing hydronic piping insulation	1	LS	$35,000	$35,000
Leak Detection Components - East Building				
Actuated shut off valves - 2 way, actuated, on CHWS/R & HHWS/R piping	28	EA	$2,500	$70,000
Miscellaneous piping, fittings, reinsulation	7	LS	$2,000	$14,000
Water sensing cables, average 25' per branch line	700	LF	$20	$14,000
Water sensing cables, average 10' per floor riser	70	LF	$20	$1,400
Water sensing cables around perimeter of pumps & boilers	500	LF	$20	$10,000
Water sensing cables above sensitive areas	3000	LF	$20	$60,000
Sensor Interface Module	9	EA	$4,000	$36,000
Domestic water flow meter for each floor	7	EA	$3,800	$26,600
Domestic water actuated shut off valve (cold only)	7	EA	$4,500	$31,500
Domestic water flow meter for main supply	1	EA	$4,400	$4,400
Domestic water actuated shut off valve (cold only)	1	EA	$6,000	$6,000
Leak Detection Components - West Building				
Actuated shut off valves - 2 way, actuated, on CHWS/R & HHWS/R piping	40	EA	$2,500	$100,000
Miscellaneous piping, fittings, reinsulation	10	LS	$2,000	$20,000
Leak detection sensing cables, average 25' per branch line	1000	LF	$20	$20,000
Leak detection sensing cables, average 10' per floor riser	100	LF	$20	$2,000
Leak detection sensing cables around perimeter of pumps & chillers	650	LF	$20	$13,000
Water sensing cables above sensitive areas	5000	LF	$20	$100,000
Sensor Interface Module	13	EA	$4,000	$52,000
Domestic water flow meter for each floor	10	EA	$3,800	$38,000
Domestic water actuated shut off valve (cold only)	10	EA	$4,500	$45,000
Domestic water flow meter for main supply	1	EA	$4,400	$4,400
Domestic water actuated shut off valve (cold only)	1	EA	$6,000	$6,000
3-way bypass to isolate East and West Buildings - Valve, actuator, piping	1	LS	$20,000	$20,000
Building Management System Components				
New BMS points				
(2) points for each actuated valve	86	EA	$750	$64,500
(1) point for each flow meter	17	EA	$750	$12,750
Leak detection points	152	EA	$750	$114,000
Graphics Updates	1	LS	$10,000	$10,000
Sequence Verification	1	LS	$5,000	$5,000
Commissioning - including shutdown sequences	1	LS	$25,000	$25,000
Annual Maintenance	1	LS	$30,000	$30,000
Subtotal				**$990,550**
Contingency	20%			**$198,110**
Total - Construction Cost				**$1,188,660**

COST SUMMARY

- Abatement = $35,000
- Domestic Water = $171,900
- Hydronic Water System = $360,400
- Sensitive Areas = $180,000
- BMS Integration = $231,250
- HHW & CHW Building Isolation = $20,000

Total ROM Cost = $1,200,000
(includes 20% contingency)

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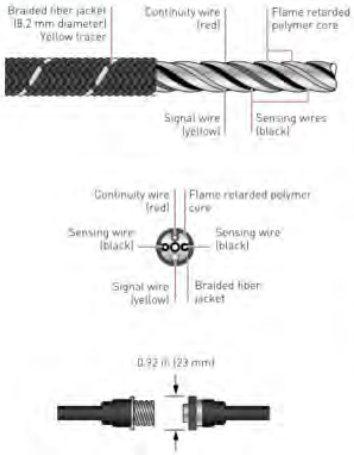
Van Nuys Courthouse

Cut Sheets

TRACETEK TT1100-OHP

WATER SENSING CABLE FOR SUSPENDED PIPE

Cable construction



PRODUCT OVERVIEW

TraceTek TT1100-OHP sensor cable detects water leaks at any point along the cable length. When used in conjunction with TraceTek monitoring instruments, the cable senses the presence of a water leak, triggers an alarm and pinpoints the location of the leak to within ±1 meter accuracy.

Targeted design for suspended piping

TT1100-OHP is supplied with an absorptive synthetic fiber braid designed to wick water along the cable even when the water leak is dripping from a single small pin hole or crack. The fiber is selected to be rapid drying so that once the leak is located and repaired, the cable will quickly dry and be ready for re-use, in many cases as soon as the pipe repairs are completed.

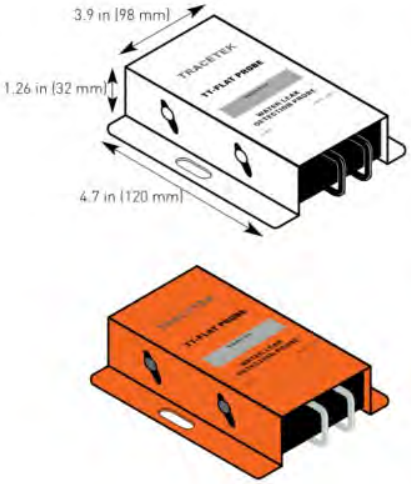
Strap directly to the pipe - Eliminate drip trays

TT1100-OHP is a distributed sensor that can be attached to the bottom of suspended piping with nylon tie-wraps. There is no need for a drip tray to bring water into contact with the sensor cable.The braided fiber jacket provides extra mechanical protection and strength for ease of installation in construction environments.

TT1100-OHP is available in bulk lengths or pre-terminated in standard lengths. TT1100-OHP is compatible with all TraceTek instruments and software.

TRACETEK TT-FLAT-PROBE

WATER LEAK DETECTION PROBE



PRODUCT OVERVIEW

The TT-FLAT PROBE is a special purpose probe designed to detect water leaks in specific locations. It is intended to be floor or tray mounted, using either screw or adhesive attachment. The unit has an orange color to promote visibility in the installed location.

The TT-FLAT PROBE can detect water leaks in low spots, drip trays or sumps, where TraceTek® sensing cables are inappropriate. The TT-FLAT PROBE is designed to be integrated as a part of a larger TraceTek leak detection system.

When mounted on a metal surface (e.g. a drip pan) and with sensor tip height adjusted very close to floor surface, minimum water depths of approximately 0.2 in (5 mm) may be required for leak detection. If the TT-FLAT PROBE is mounted on an insulating surface, minimum water depths of approximately 0.5 in (12.7 mm) may be required for leak detection.

The TT-FLAT PROBE can be interconnected with jumper cable to otherTT-FLAT PROBE or TraceTek sensing cable segments, and be monitored by a TraceTek TTDM-128 or TT-SIM module.

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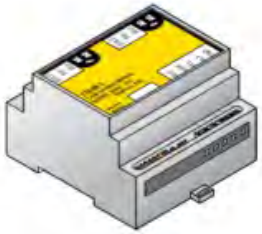
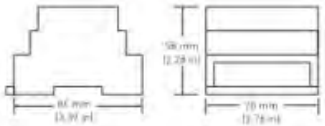
Van Nuys Courthouse

Cut Sheets

TRACETEK TTSIM-1
SENSOR INTERFACE MODULE





PRODUCT OVERVIEW

Easy setup and simple operation

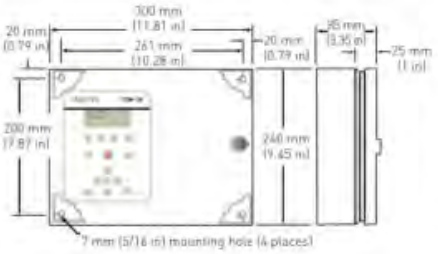
The TTSIM-1 is a Sensor Interface Module capable of monitoring up to 1500 meters (5000 feet) of TraceTek sensing cable. When liquid is detected, the TTSIM-1 locates the leak and communicates the leak details to the host monitoring system. The TTSIM-1 can communicate to a variety host monitoring systems including a TraceTek TTDM-128, a PLC, DCS or Building Management System using standard protocols. No field calibration is required.

The TTSIM-1 is well suited to applications where large areas are being monitored, or long sensor circuit lengths are required. Since it incorporates multiple sensor monitoring algorithms, the TTSIM-1 is capable of performing several specialized leak detection measurements. These algorithms make TTSIM-1 especially well suited to monitoring long circuits of TraceTek hydrocarbon sensing cables that are installed in demanding applications.

Design features

- LEDs to indicate power, status and communication
- Responsive to a variety of communication protocols. Protocol selection is automatic
- Simple twisted pair serial RS-485 communications up to 1200 meters (4000 feet) without amplification
- Operates on 24 Vac 50/60 Hz or 12 Vdc or 24 Vdc power supply
- Each TTSIM-1 unit has a unique address assigned with software – no switches
- Special leak detection algorithms provide enhanced capability for difficult applications
- DIN rail mounted for easy installation
- Enclosures available for stand-alone indoor or outdoor installations

TRACETEK TTDM-128
LEAK DETECTION MASTER MODULE



PRODUCT OVERVIEW

Easy setup and simple operation

The TTDM-128 module directly monitors up to 1500 m (5000 ft) of sensor cable and a network of up to 128 remote TraceTek modules. The remote modules may be a combination of sensor interface modules (TTSIM), relay modules (TT-NRM) or additional TTDM-128 modules. With its networking capability, the TTDM-128 provides tremendous flexibility in terms of system layout options and monitoring capability.

When liquid is detected on any of the sensors, the TTDM-128 sounds an alarm, closes relay contacts, turns on a front panel LED and displays the circuit identification and location of the leak on the alphanumeric display. The leak detection event is logged to a non-volatile event history file. All status and event information is made available via the front panel keyboard or RS232/RS485 modbus digital communication to a host computer, PLC or plant/building automation system.

Each sensor circuit detects, locates and tracks leaks independently from any other circuits connected to the TTDM-128. There is no loss of sensitivity and no re-mapping required after an initial leak is detected. A simple map showing where the sensors are installed is the only field calibration requirement.

JUDICIAL COUNCIL OF CALIFORNIA

Compton Courthouse

JUDICIAL COUNCIL OF CALIFORNIA

Compton Courthouse

Background

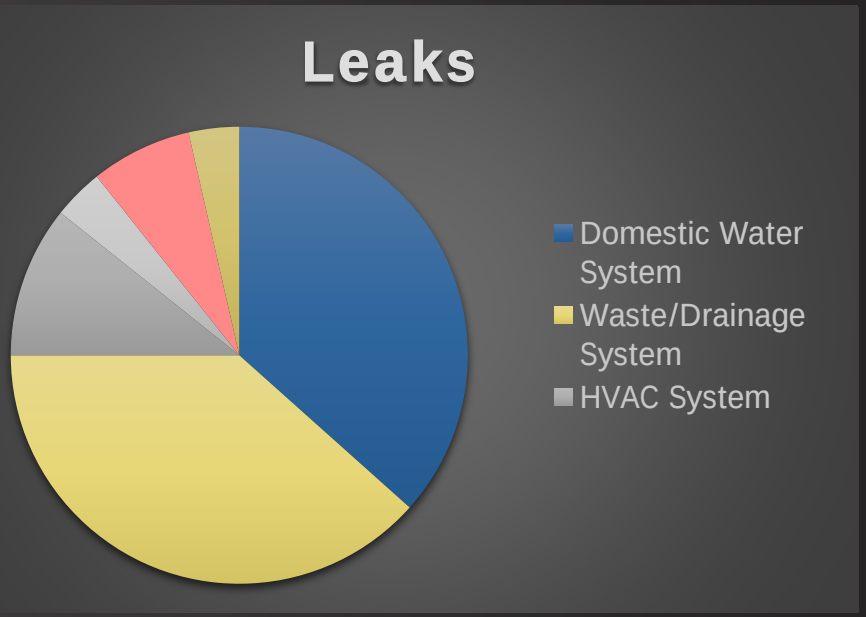
- An assessment of the pressurized water systems at the Compton Courthouse was conducted by Salas O'Brien. This presentation summarizes the findings of that assessment.
- Pressurized water systems include both hydronic water (chilled water and heating hot water for cooling/heating building) and the domestic water system.
- Site observations were conducted to assess the current condition of the existing hydronic and domestic water infrastructure, and determine which systems may be susceptible to potential leaks.
- Assessment also investigated the best methods for implementing a leak detection system.
- Compton Courthouse consists of 12 stories of occupied spaces, in addition to a basement and mechanical penthouse.
- The Courthouse is approximately 430,000 square feet.
- Constructed in 1977.

JUDICIAL COUNCIL OF CALIFORNIA

Compton Courthouse

Leak History

- Approximately 112 P1s since September 2010 to repair leaks and damage the leaks have caused.
- Cost: Approximately $3 million
  - 37% – Domestic Water System
  - 38% – Waste/Drainage System
  - 11% – HVAC System
  - 4%– Storm Drainage System
  - 7% – Miscellaneous
    - Elevator Hydraulic Fluid
    - Diesel Fuel for Generator
    - Refrigerator
  - 4% – Fire Protection System



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Compton Courthouse

Assessment

- Two sites visits conducted—10/16/2019 & 01/09/2020
- 10/16/2019 site investigation concluded the following:
  - ✓ Hydronic water piping infrastructure, including main riser and branch lines in mechanical rooms, appear to be in good condition.
  - ✓ Mechanical equipment for chilled water (chiller and pumps) are reaching end of useful life, per Ashrae standards. However, chillers and pumps visually appear to be in good condition and there have been no historical leaks associated with this system.
  - ✓ Mechanical equipment for heating hot water (boilers and pumps) are relatively new and in good condition.
  - ✓ Domestic water booster pump system, located in basement, is new and in good condition.
  - ✓ Domestic water pressure reducing stations (every other floor) are new and in good condition.
  - ✓ No reliable Building Management System
  - ✓ Cost effective opportunities exist to monitor leaks in the riser and branch hydronic piping, as well as monitor flows in the domestic water distribution piping, to implement a building wide leak detection system.
- Domestic water system most susceptible to leaks.
- Majority of leaks have occurred in the sanitary drainage system (floor/roof drains).
- During the 01/09/2020 site visit with JCC, the conceptual design was discussed with respect to reliability, effectiveness and cost of the system. The final recommendations are presented on the following slides.

Compton Courthouse

Hydronic Water (Chilled Water 'CHW' & Heating Hot Water 'HHW'

- Add water sensing cables at each CHW & HHW floor penetration.
- Add water sensing cables on the underside of each CHW & HHW branch piping.
- Add water sensing cables around the perimeter of each chiller, boiler and pump in the mechanical penthouse
- Add actuated shut off valves at the CHW & HHW branch lines.
- Since there is no reliable BMS at Compton Courthouse, the system will need to be a standalone system, sending alerts to key personnel without the ability to provide automatic shutoff. Once installation of BMS is completed, automatic shutdown sequences can be integrated into the leak detection system.

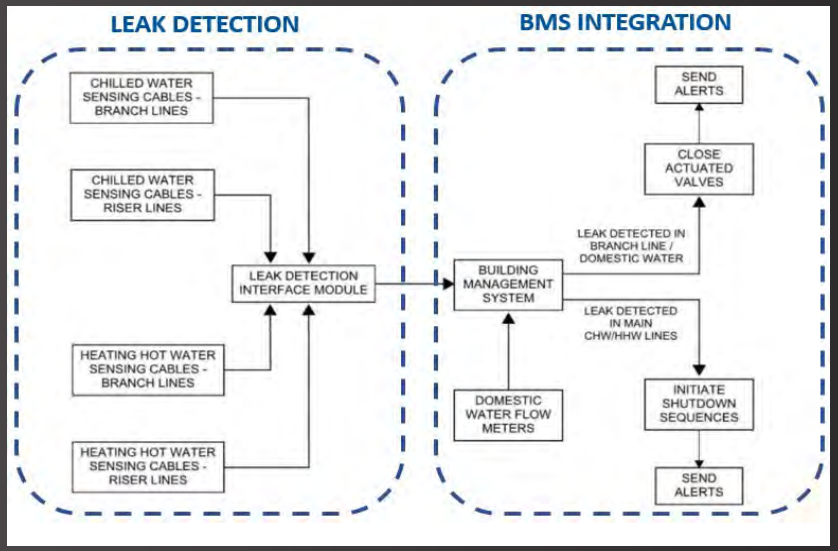
Domestic Water

- Add flow meters to each pressure reducing station, which provides domestic water to (2) floors.
- Add flow meter to main domestic water line to building.
- Once a BMS is installed for this Courthouse, the flow meters can communicate with actuated valves to provide automatic shutoff of domestic water—replacing existing shutoff valves with actuated shutoff valves is an option that can be included in the design.

Additionally, water sensing cables should be added above all sensitive areas—including IT/server rooms and evidence rooms

Compton Courthouse

Initial implementation consists of adding sensors previously described, and connecting to a dedicated computer for the leak detection system, to send alerts to key personnel. All systems will have to be shut down manually



After Building Management System (BMS) is installed, system should be integrated into BMS to trend flows and provide automatic shutdown of systems.

Compton Courthouse

Rough Order of Magnitude Cost

Judicial Council of California
Water Leak Detection Study - Compton Courthouse
Rough Order of Magnitude Cost Estimate

Item Description	Quantity	Unit	Unit Cost	TOTAL
Leak Detection Components				
Actuated shut off valves - 2 way, actuated, on CHWS/R & HHWS/R piping	48	EA	$2,500	$120,000
Miscellaneious piping, fittings, reinsulation	12	LS	$2,000	$24,000
Water sensing cables, average 25' per branch line	1200	LF	$20	$24,000
Water sensing cables, average 10' per floor riser	120	LF	$20	$2,400
Water sensing cables around equipment perimeters	1000	LF	$20	$20,000
Water sensing cables in fire water storage room	100	LF	$20	$2,000
Water sensing cables in booster pump room	100	LF	$20	$2,000
Water sensing cables above sensitive rooms	5000	LF	$20	$100,000
Sensor Interface Module (1 per mech rm, 1 in penthouse, 1 in water storage	18	EA	$4,000	$72,000
Domestic water flow meter (1 per reducing station)	6	EA	$6,200	$37,200
Domestic water main shut off valve	1	EA	$5,000	$5,000
Domestic water branch actuated, shut off vavles	6	EA	$4,000	$24,000
Building Management System Components				
New BMS points				
(2) points for each actuated valve	48	EA	$750	$36,000
(1) point for each flow meter	6	EA	$750	$4,500
Leak detection points	98	EA	$750	$73,500
Standalone software/workstation for alarm generations	1	LS	$12,500	$12,500
Graphics Updates	1	LS	$20,000	$20,000
Sequence Verification	1	LS	$10,000	$10,000
Commissioning - including shutdown sequences	1	LS	$25,000	$25,000
Annual Maintenance	1	LS	$20,000	$20,000
Subtotal				**$634,100**
Contingency	20%			**$126,820**
Total - Construction Cost				**$760,920**

COST SUMMARY

- Domestic Water = $88,950
- Hydronic Water System = $265,150
- Sensitive Areas = $116,000
- BMS Integration = $144,000

Total ROM Cost = $760,000
(includes 20% contingency)

JUDICIAL COUNCIL OF CALIFORNIA

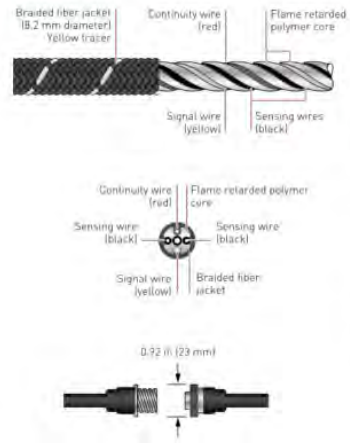
Compton Courthouse

Cut Sheets

TRACETEK TT1100-OHP

WATER SENSING CABLE FOR SUSPENDED PIPE

Cable construction



PRODUCT OVERVIEW

TraceTek TT1100-OHP sensor cable detects water leaks at any point along the cable length. When used in conjunction with TraceTek monitoring instruments, the cable senses the presence of a water leak, triggers an alarm and pinpoints the location of the leak to within ±1 meter accuracy.

Targeted design for suspended piping

TT1100-OHP is supplied with an absorptive synthetic fiber braid designed to wick water along the cable even when the water leak is dripping from a single small pin hole or crack. The fiber is selected to be rapid drying so that once the leak is located and repaired, the cable will quickly dry and be ready for re-use, in many cases as soon as the pipe repairs are completed.

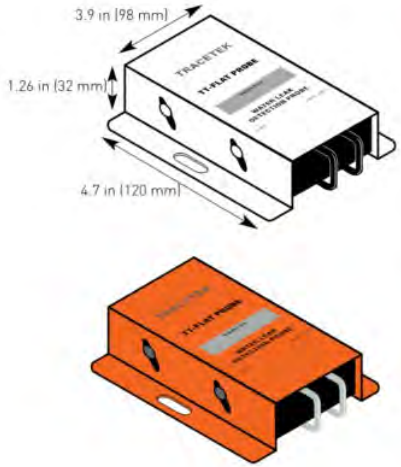
Strap directly to the pipe - Eliminate drip trays

TT1100-OHP is a distributed sensor that can be attached to the bottom of suspended piping with nylon tie-wraps. There is no need for a drip tray to bring water into contact with the sensor cable.The braided fiber jacket provides extra mechanical protection and strength for ease of installation in construction environments.

TT1100-OHP is available in bulk lengths or pre-terminated in standard lengths. TT1100-OHP is compatible with all TraceTek instruments and software.

TRACETEK TT-FLAT-PROBE

WATER LEAK DETECTION PROBE



PRODUCT OVERVIEW

The TT-FLAT PROBE is a special purpose probe designed to detect water leaks in specific locations. It is intended to be floor or tray mounted, using either screw or adhesive attachment. The unit has an orange color to promote visibility in the installed location.

The TT-FLAT PROBE can detect water leaks in low spots, drip trays or sumps, where TraceTek® sensing cables are inappropriate. The TT-FLAT PROBE is designed to be integrated as a part of a larger TraceTek leak detection system.

When mounted on a metal surface (e.g. a drip pan) and with sensor tip height adjusted very close to floor surface, minimum water depths of approximately 0.2 in (5 mm) may be required for leak detection. If the TT-FLAT PROBE is mounted on an insulating surface, minimum water depths of approximately 0.5 in (12.7 mm) may be required for leak detection.

The TT-FLAT PROBE can be interconnected with jumper cable to otherTT-FLAT PROBE or TraceTek sensing cable segments, and be monitored by a TraceTek TTDM-128 or TT-SIM module.

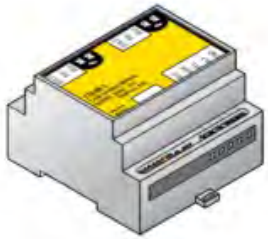
JUDICIAL COUNCIL OF CALIFORNIA

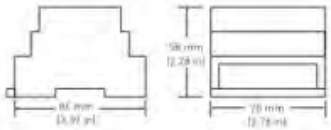
Compton Courthouse

Cut Sheets

TRACETEK TTSIM-1

SENSOR INTERFACE MODULE





PRODUCT OVERVIEW

Easy setup and simple operation

The TTSIM-1 is a Sensor Interface Module capable of monitoring up to 1500 meters (5000 feet) of TraceTek sensing cable. When liquid is detected, the TTSIM-1 locates the leak and communicates the leak details to the host monitoring system. The TTSIM-1 can communicate to a variety host monitoring systems including a TraceTek TTDM-128, a PLC, DCS or Building Management System using standard protocols. No field calibration is required.

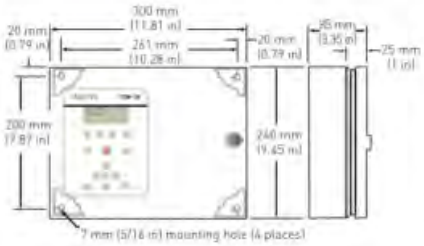
The TTSIM-1 is well suited to applications where large areas are being monitored, or long sensor circuit lengths are required. Since it incorporates multiple sensor monitoring algorithms, the TTSIM-1 is capable of performing several specialized leak detection measurements. These algorithms make TTSIM-1 especially well suited to monitoring long circuits of TraceTek hydrocarbon sensing cables that are installed in demanding applications.

Design features

- LEDs to indicate power, status and communication
- Responsive to a variety of communication protocols. Protocol selection is automatic
- Simple twisted pair serial RS-485 communications up to 1200 meters (4000 feet) without amplification
- Operates on 24 Vac 50/60 Hz or 12 Vdc or 24 Vdc power supply
- Each TTSIM-1 unit has a unique address assigned with software – no switches
- Special leak detection algorithms provide enhanced capability for difficult applications
- DIN rail mounted for easy installation
- Enclosures available for stand-alone indoor or outdoor installations

TRACETEK TTDM-128

LEAK DETECTION MASTER MODULE



PRODUCT OVERVIEW

Easy setup and simple operation

The TTDM-128 module directly monitors up to 1500 m (5000 ft) of sensor cable and a network of up to 128 remote TraceTek modules. The remote modules may be a combination of sensor interface modules (TTSIM), relay modules (TT-NRM) or additional TTDM-128 modules. With its networking capability, the TTDM-128 provides tremendous flexibility in terms of system layout options and monitoring capability.

When liquid is detected on any of the sensors, the TTDM-128 sounds an alarm, closes relay contacts, turns on a front panel LED and displays the circuit identification and location of the leak on the alphanumeric display. The leak detection event is logged to a non-volatile event history file. All status and event information is made available via the front panel keyboard or RS232/RS485 modbus digital communication to a host computer, PLC or plant/building automation system.

Each sensor circuit detects, locates and tracks leaks independently from any other circuits connected to the TTDM-128. There is no loss of sensitivity and no re-mapping required after an initial leak is detected. A simple map showing where the sensors are installed is the only field calibration requirement.

Action Item 10
FY 21-22 Budget Change Proposals

1. Trial Court Facility Operations
2. Trial Court Leased Space
3. Trial Court Deferred Maintenance
4. Court of Appeal Facility Operations and Deferred Maintenance
5. Energy Efficiency
6. Revenue Shortfall in Sate Court Facilities Construction Fund (Fund #3037) - new

JUDICIAL COUNCIL OF CALIFORNIA

Action Item 10
FY 21-22 Budget Change Proposals

BCP Timeline (all dates in 2020):

February 14th	Completed Budget Change Concepts (BCCs) with Advisory Committee Approvals
March 22nd	JBBC Meeting to review BCCs
May 4th	Final day for office head to submit Phase II BCC
May 22nd	Submission of BCP narratives
May 26th	JBBC Meeting to develop final recommendation
June 25th	E&P Meeting
July 23-24th	Judicial Council BCP Approval Meeting
July 24th	Draft BCPs due
September 1st	Final BCPs to DOF

JUDICIAL COUNCIL OF CALIFORNIA

Discussion Item 1
List E – Court Funded Requests

Approved CFRs:

1. Butte – North Butte County CH – $6,458
2. Los Angeles – Central Civil West CH -$1,414,050
3. Madera – Main Courthouse - $749
4. Orange – Central Justice Center - $435,283
5. Santa Clara – 64 N. Market St - $65,000
6. Sonoma – Empire Annex - $145,571

Cancelled CFRs:

1. San Bernardino – Victorville Courthouse - $50,000
2. Yolo – Yolo Superior Courthouse - $36,505

Discussion Item 2
List F – Funded FMs on Hold

- On Hold for Shared Cost Approval
  - 4 FMs
  - $ 5,327,422 JCC Share

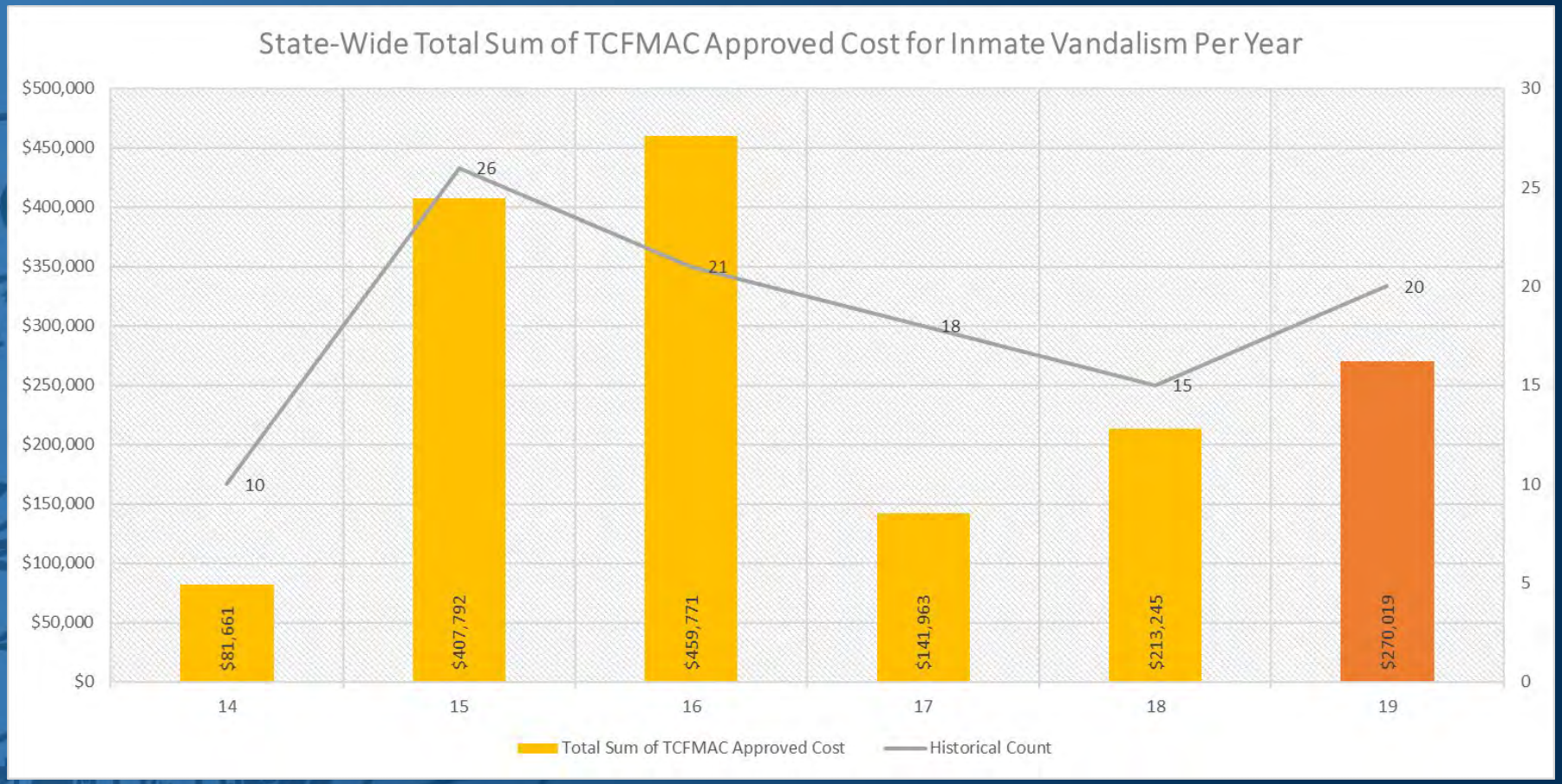
JUDICIAL COUNCIL OF CALIFORNIA

Discussion Item 3
5-Year Vandalism Analysis

Vandalism

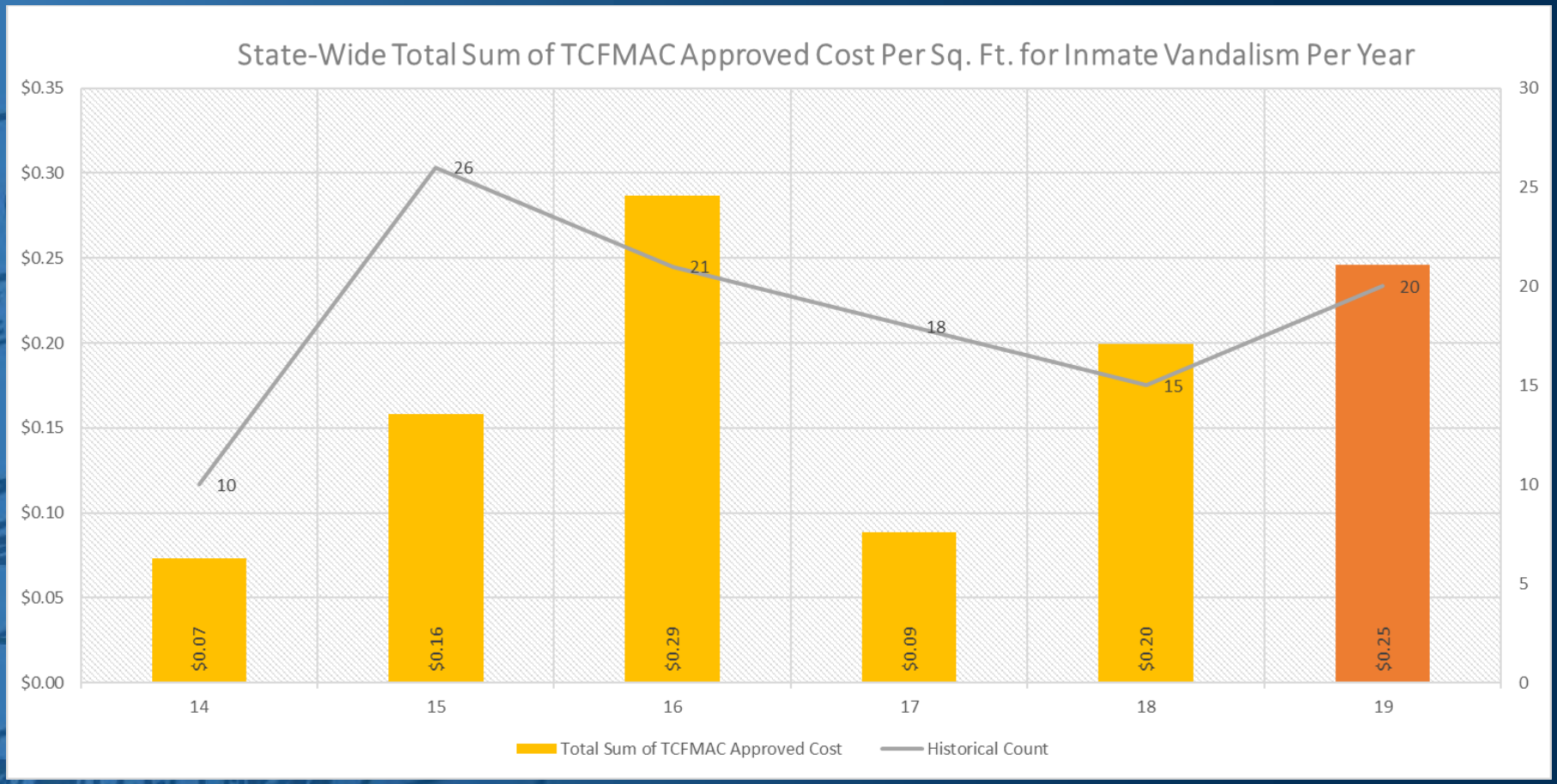
Inmate Analysis

Discussion Item 3
5-Year Vandalism Analysis



JUDICIAL COUNCIL OF CALIFORNIA

Discussion Item 3
5-Year Vandalism Analysis



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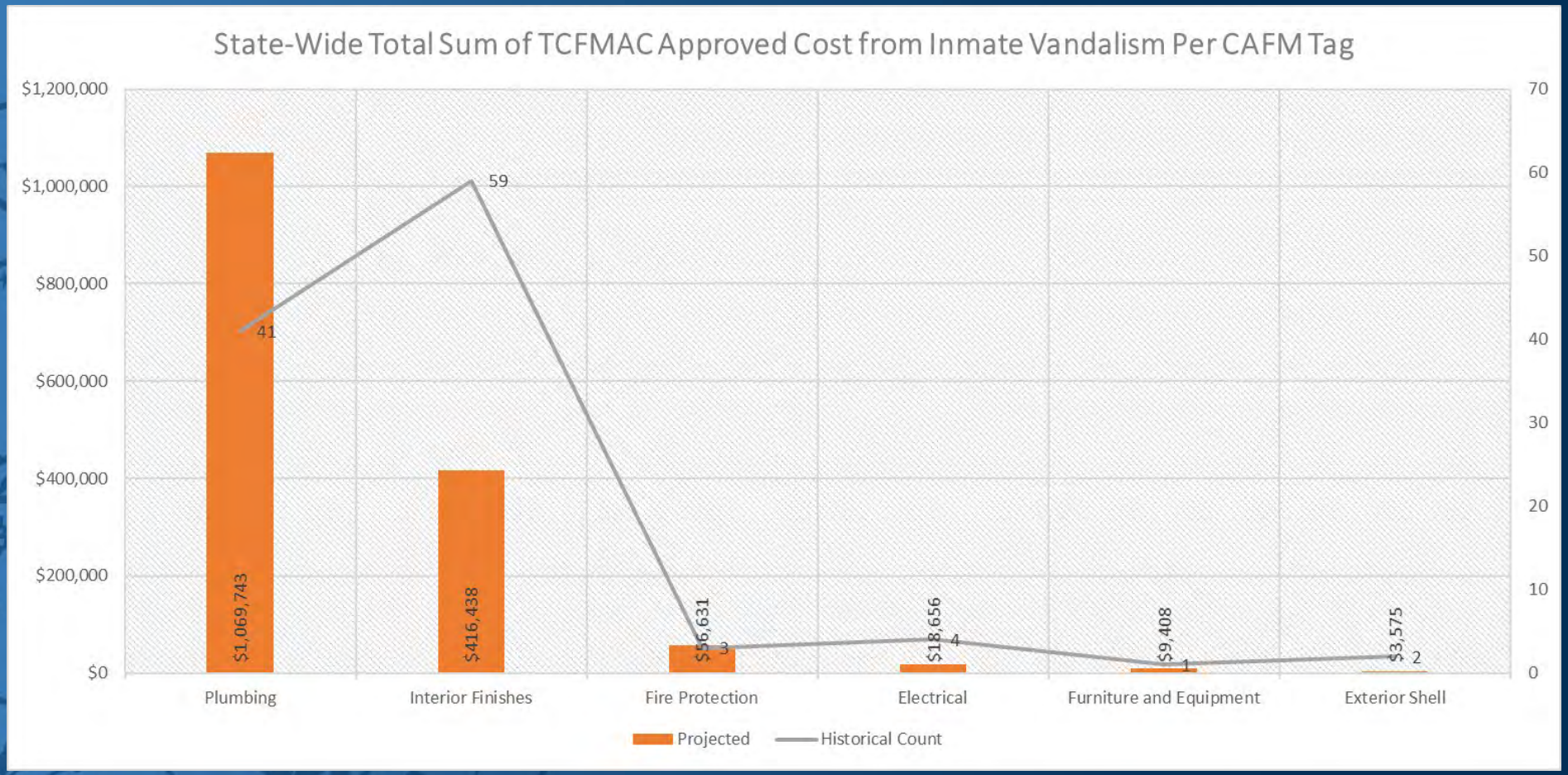

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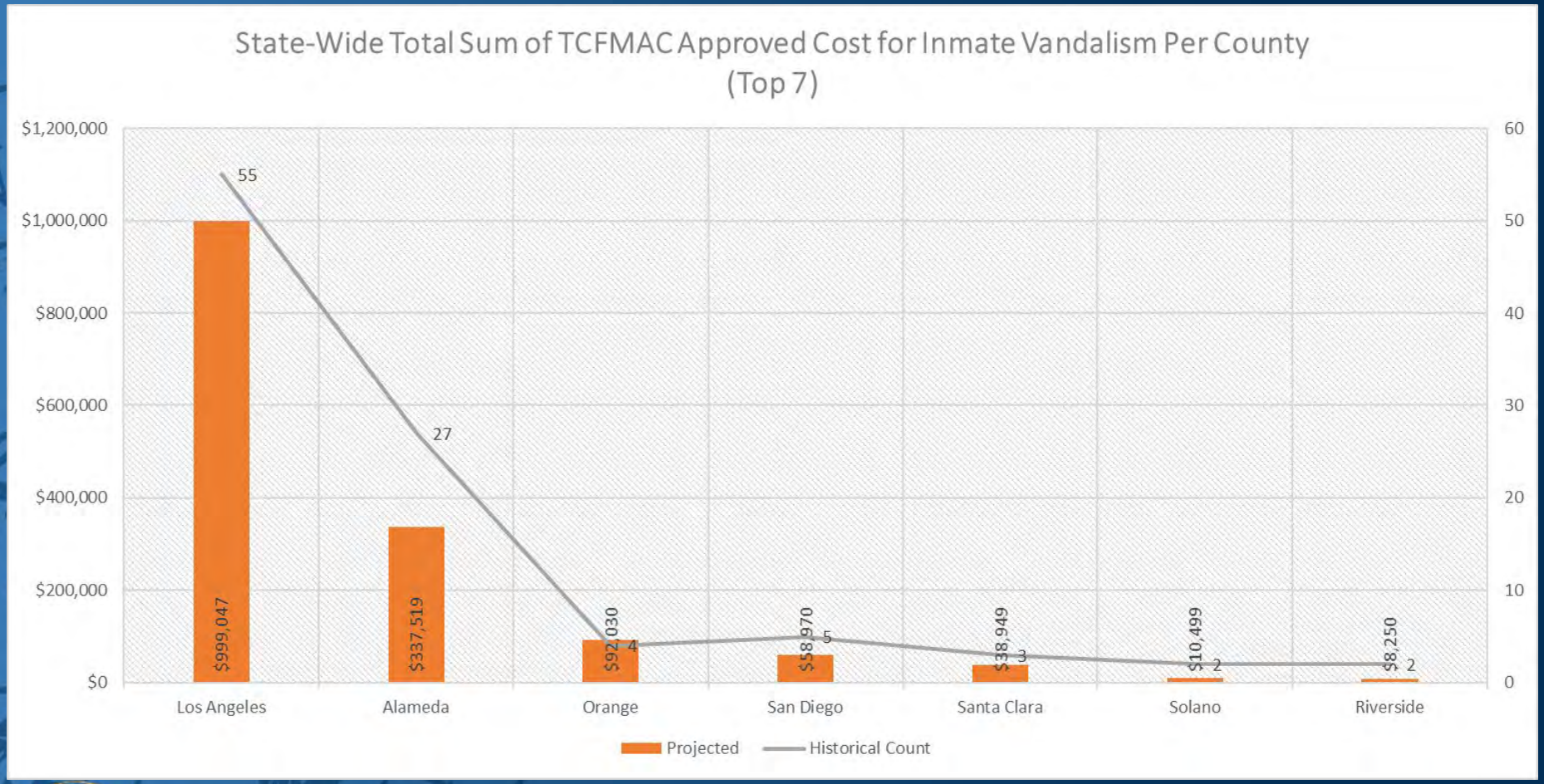

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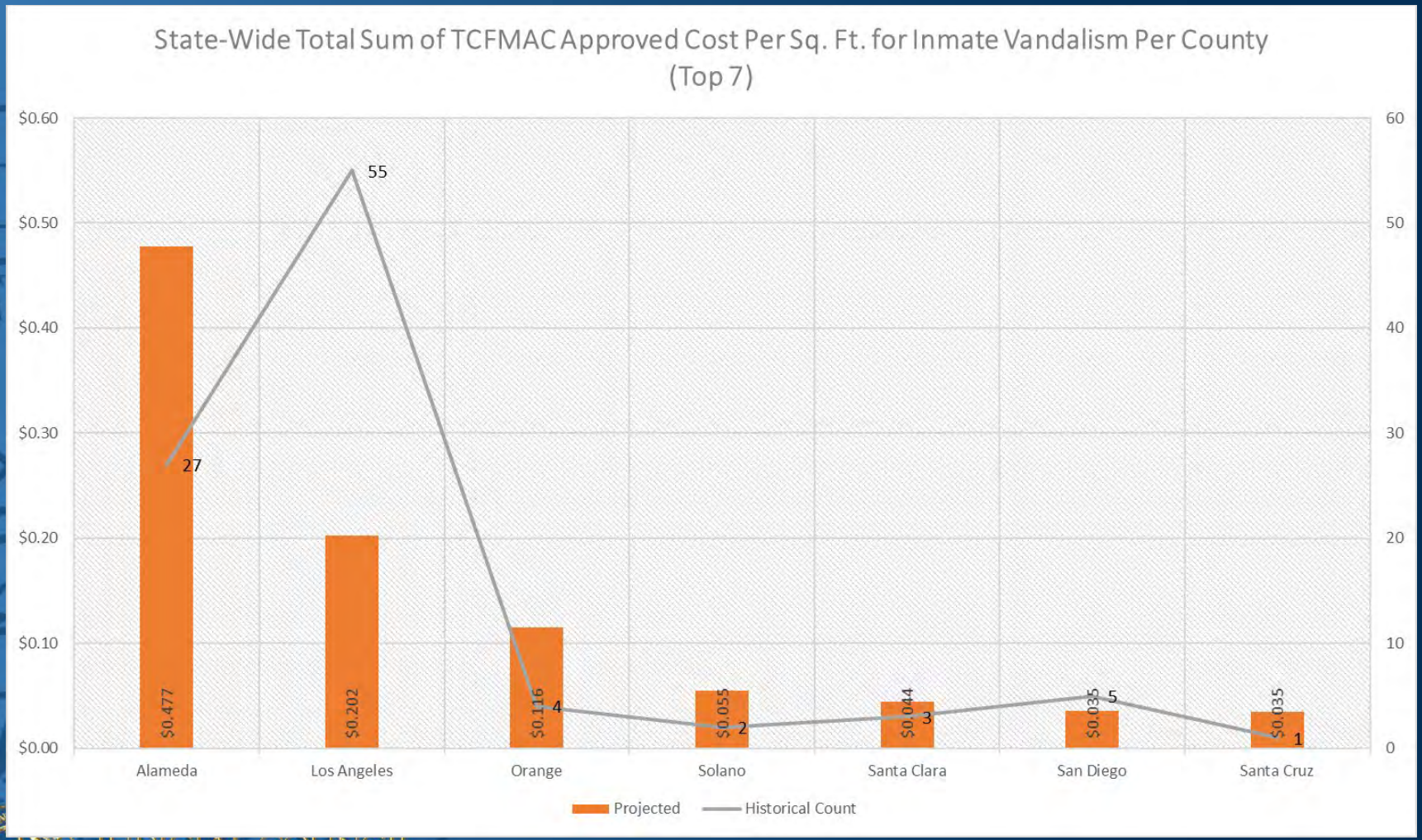
5-Year Vandalism Analysis



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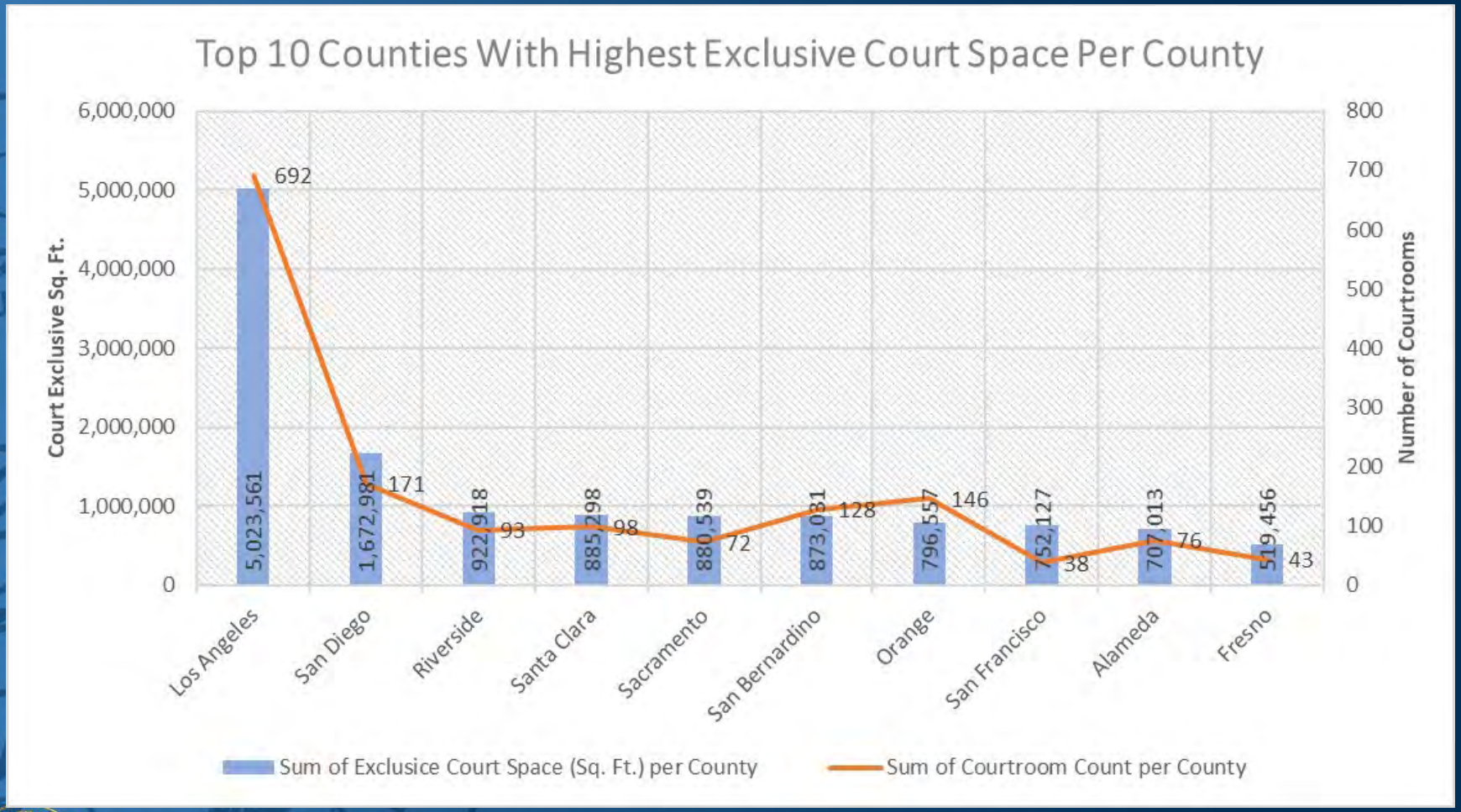

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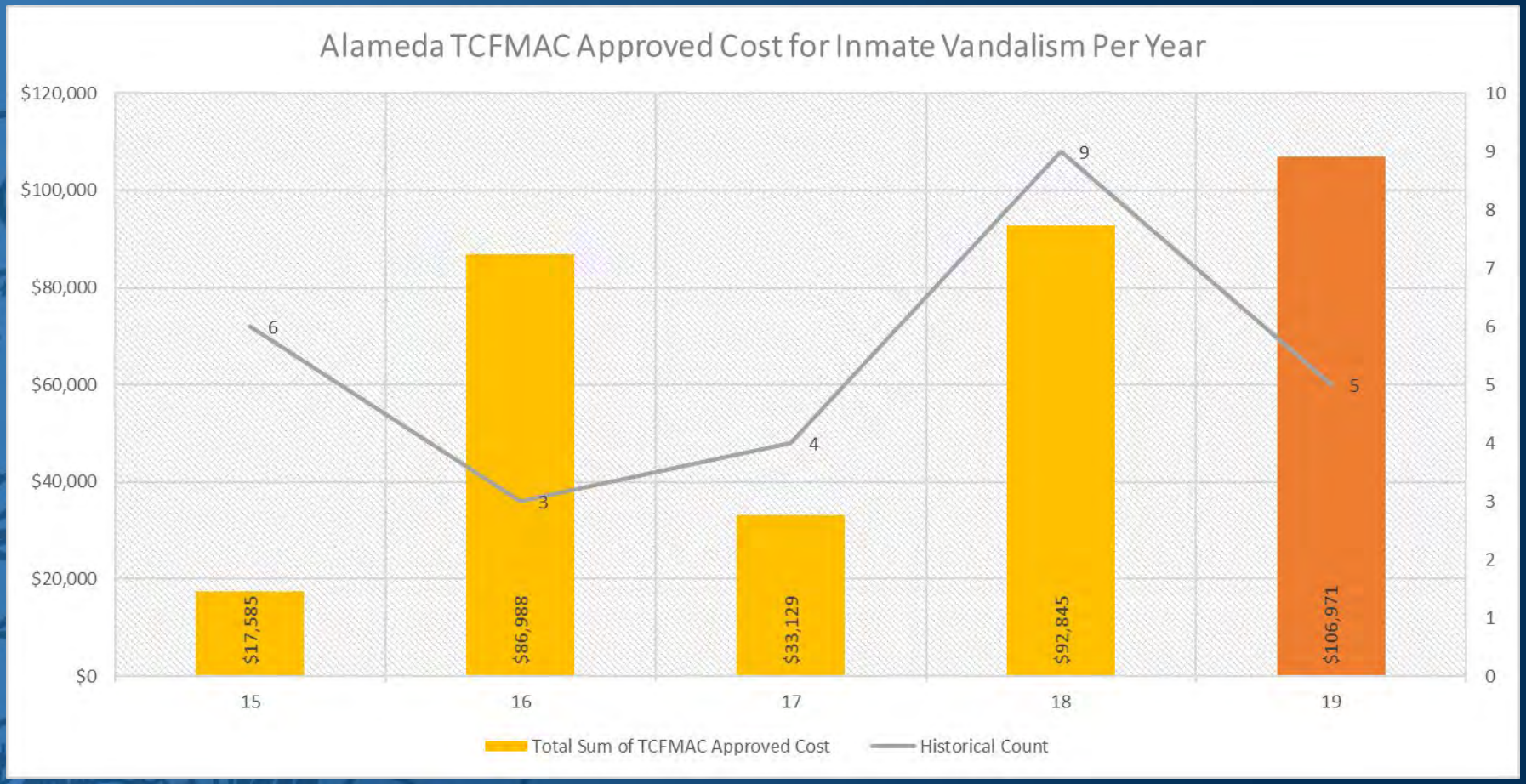

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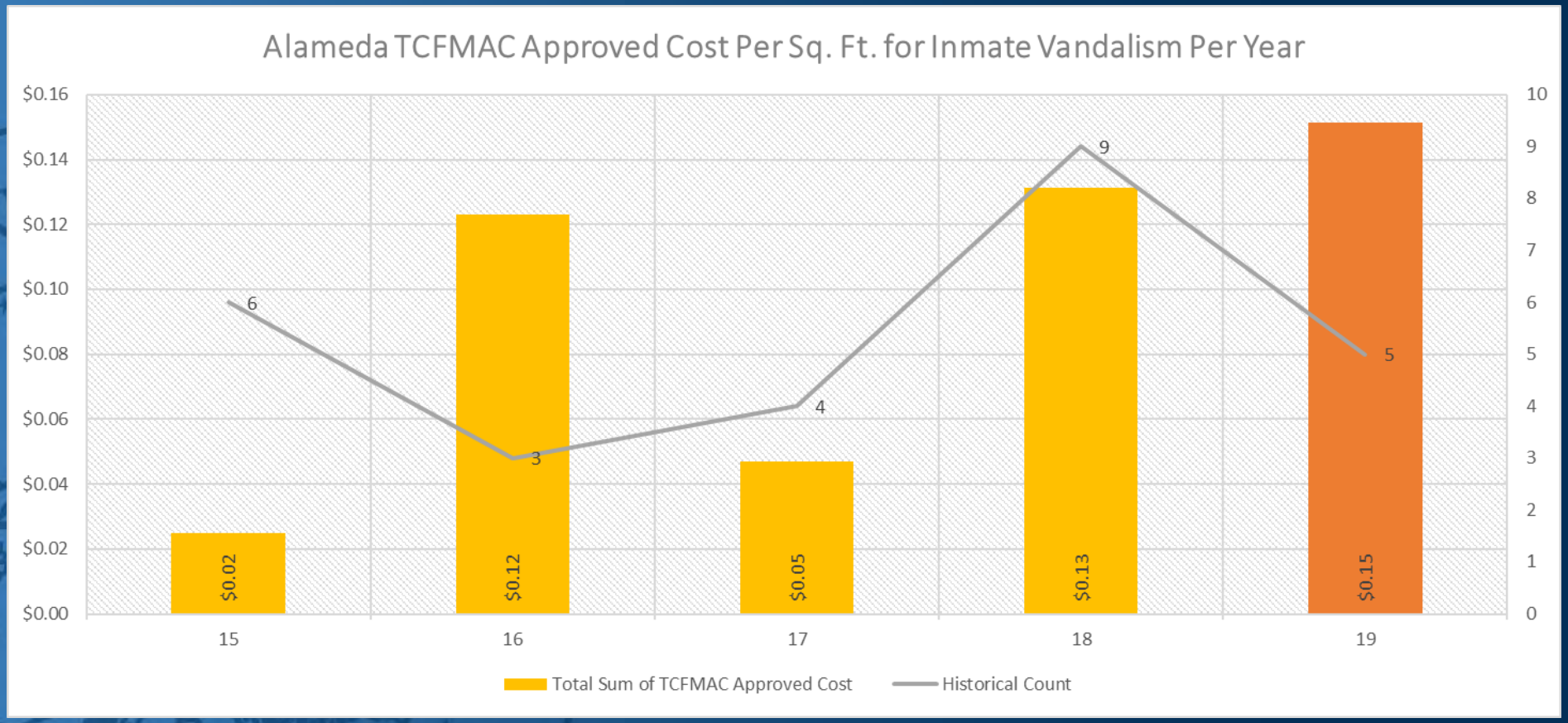

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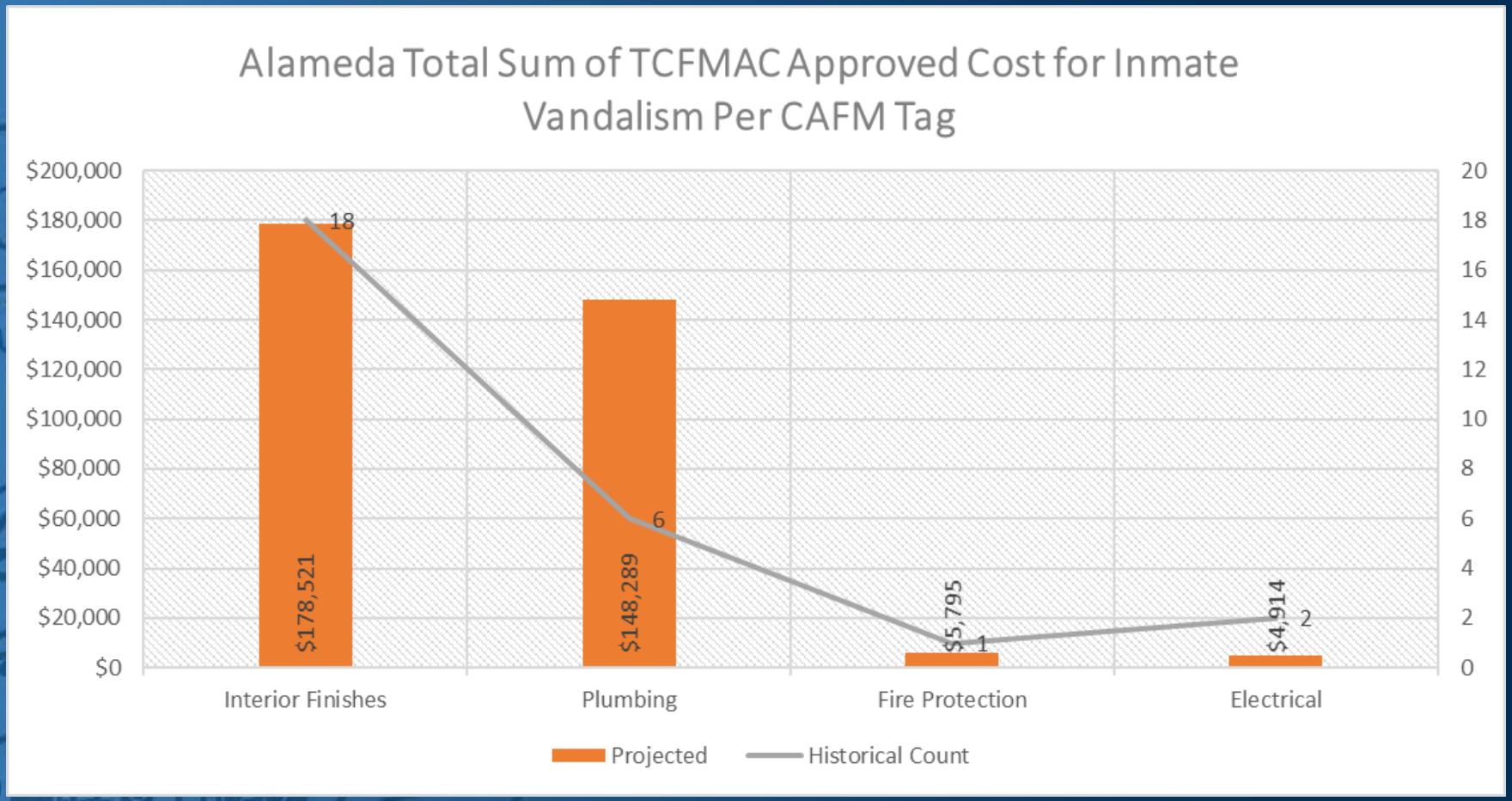

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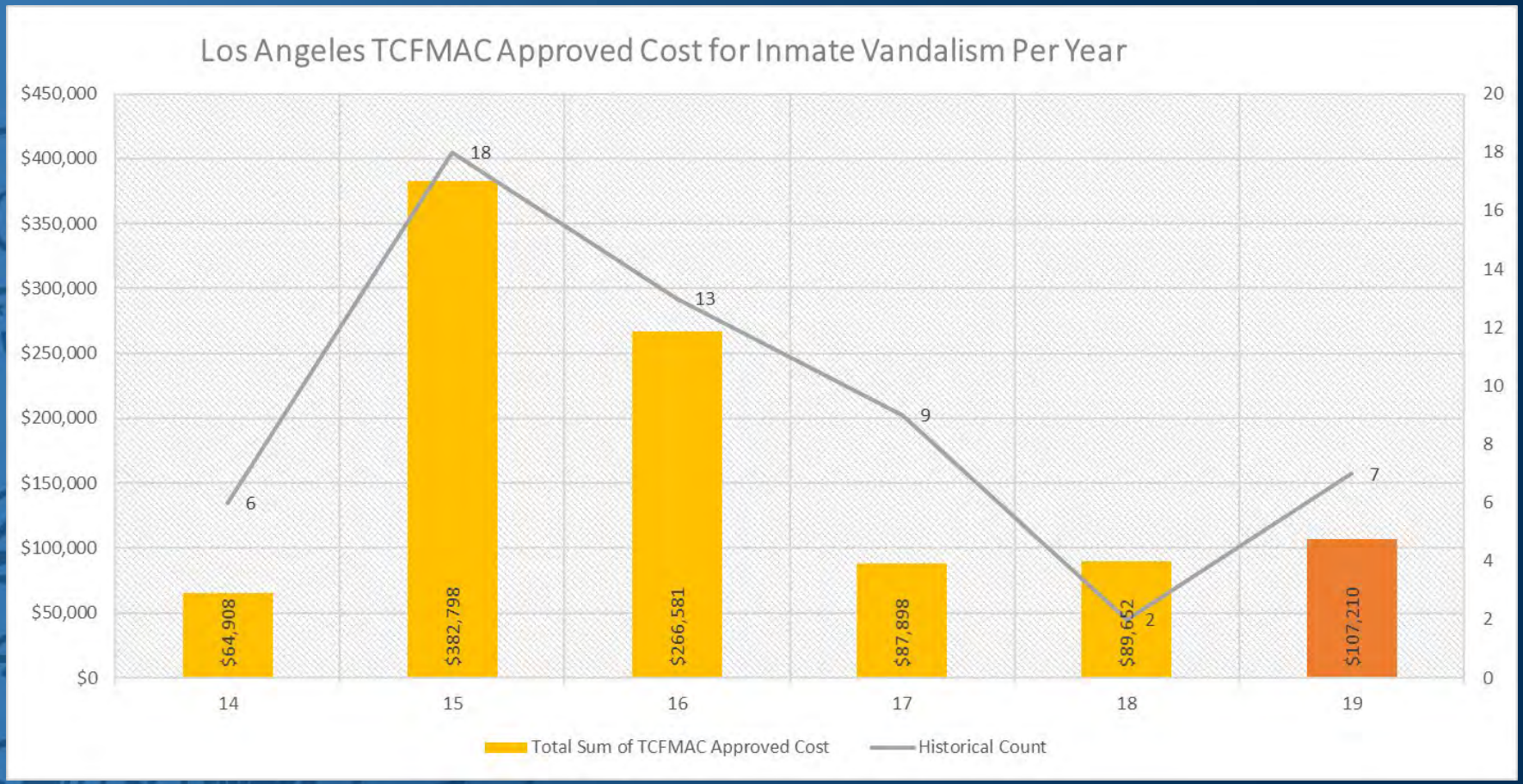

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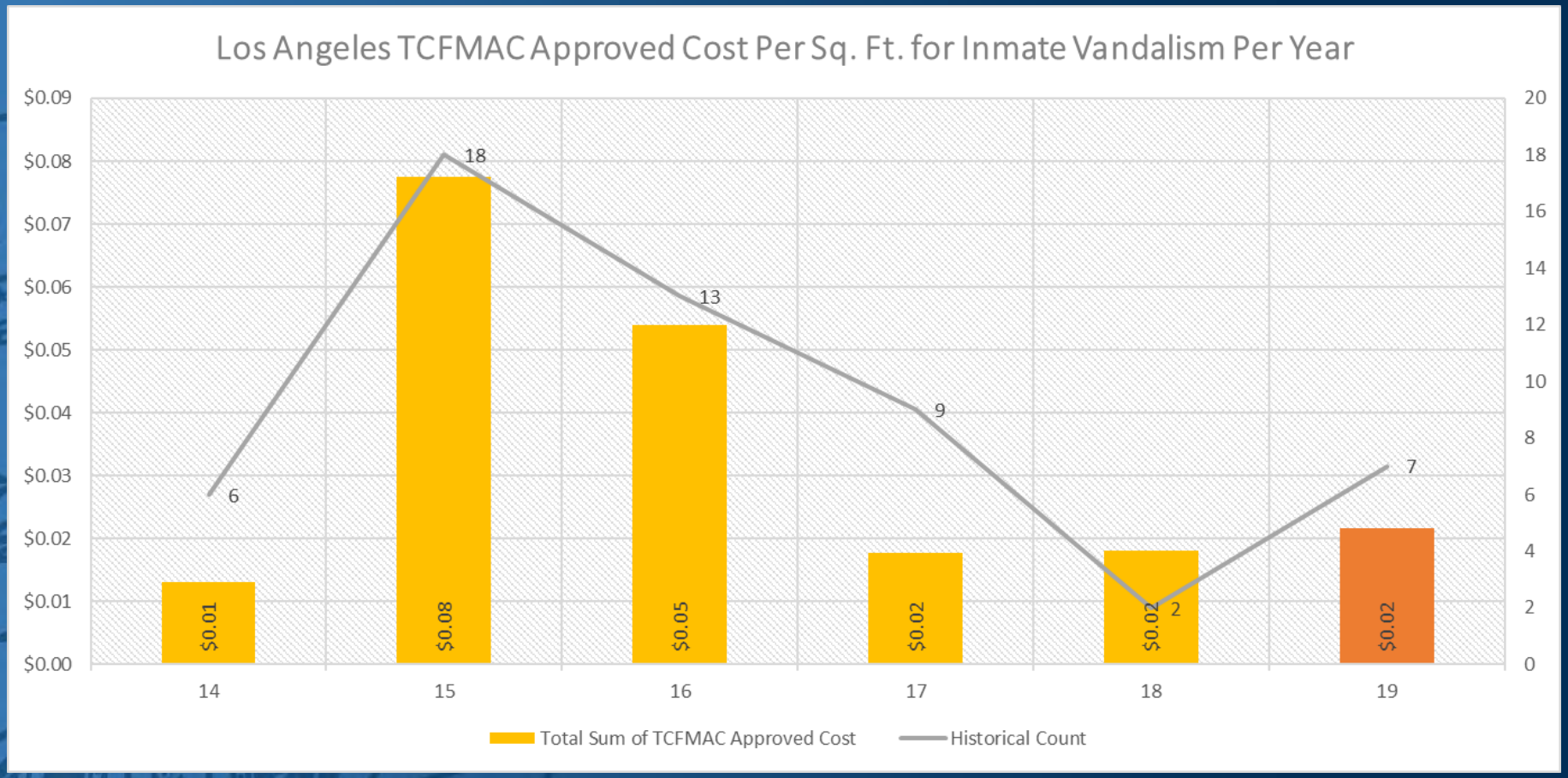

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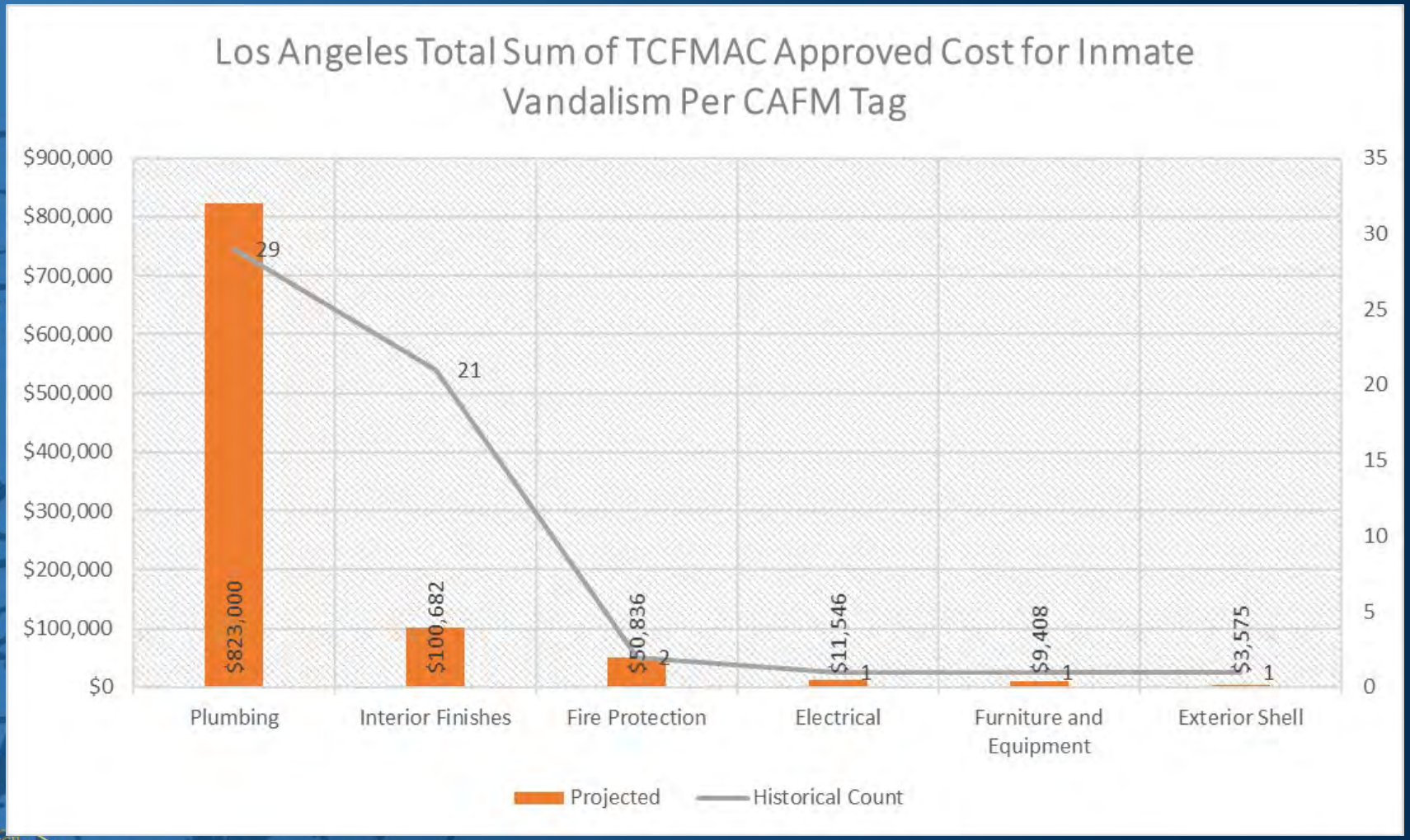
5-Year Vandalism Analysis



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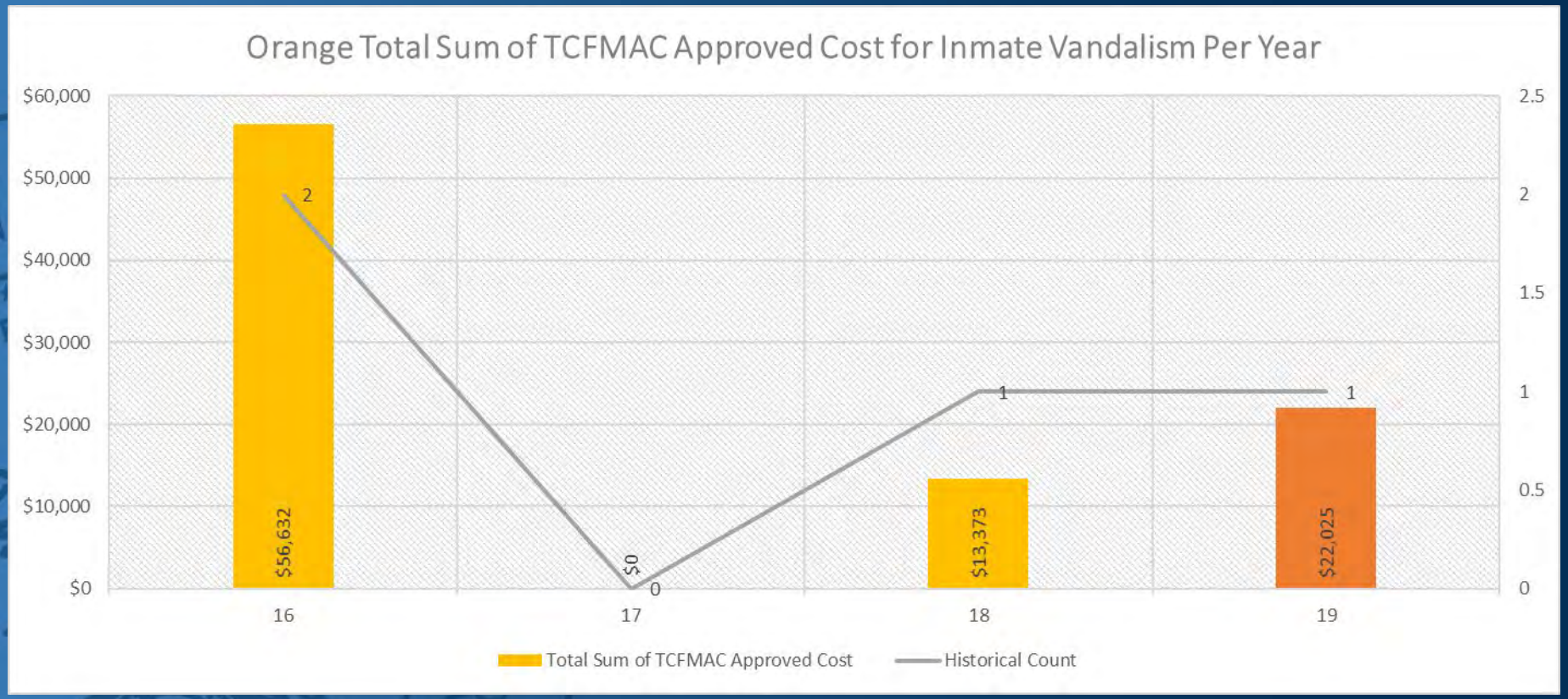

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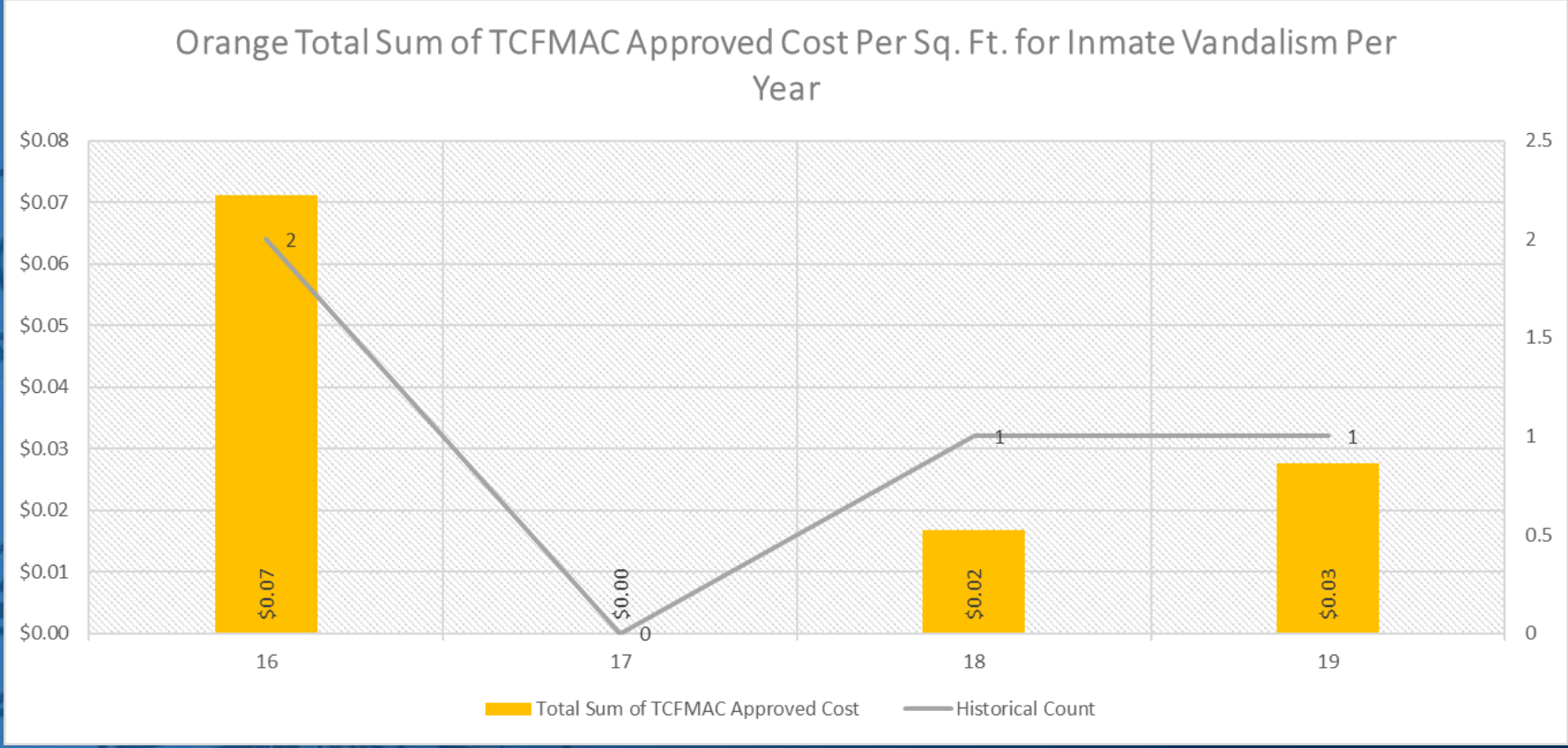

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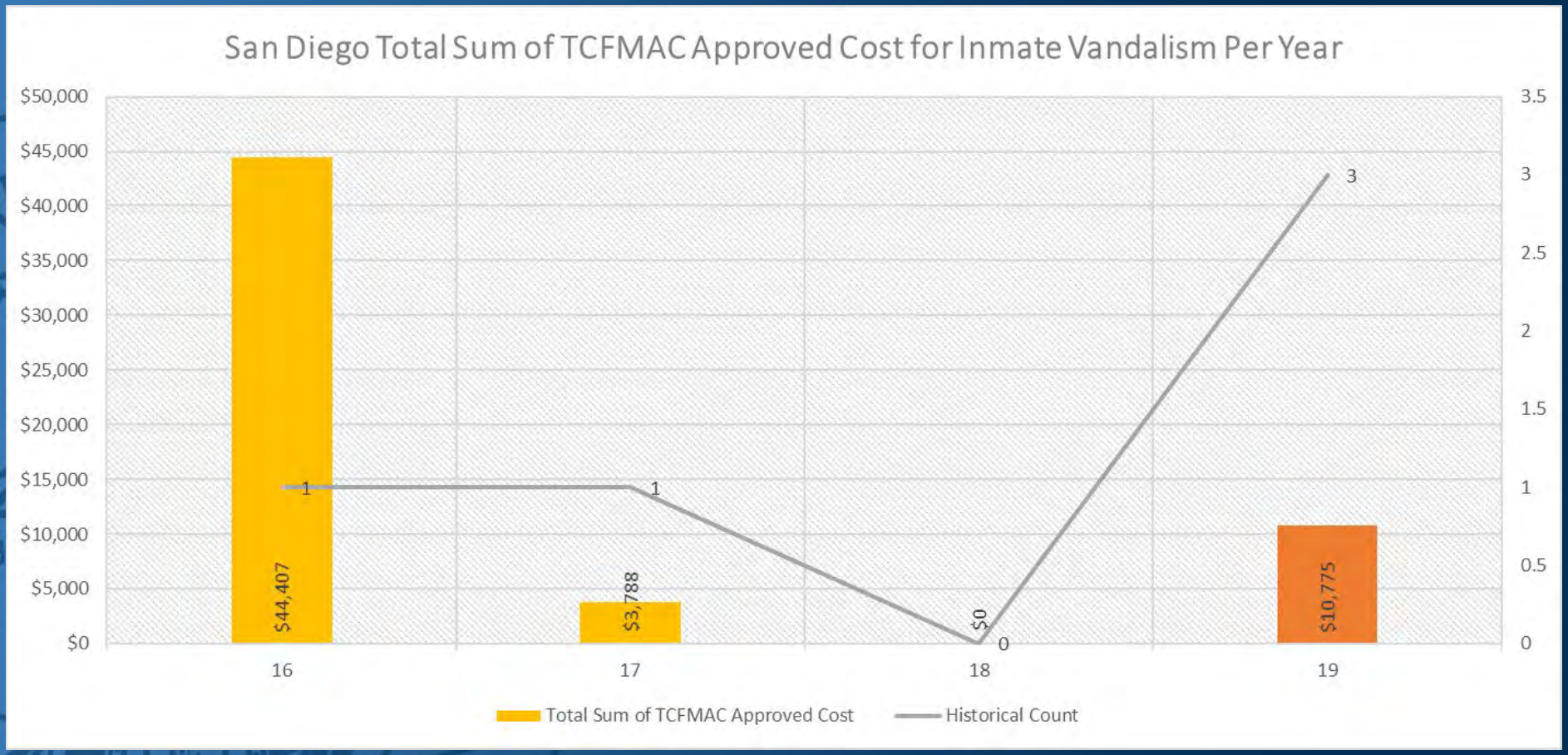

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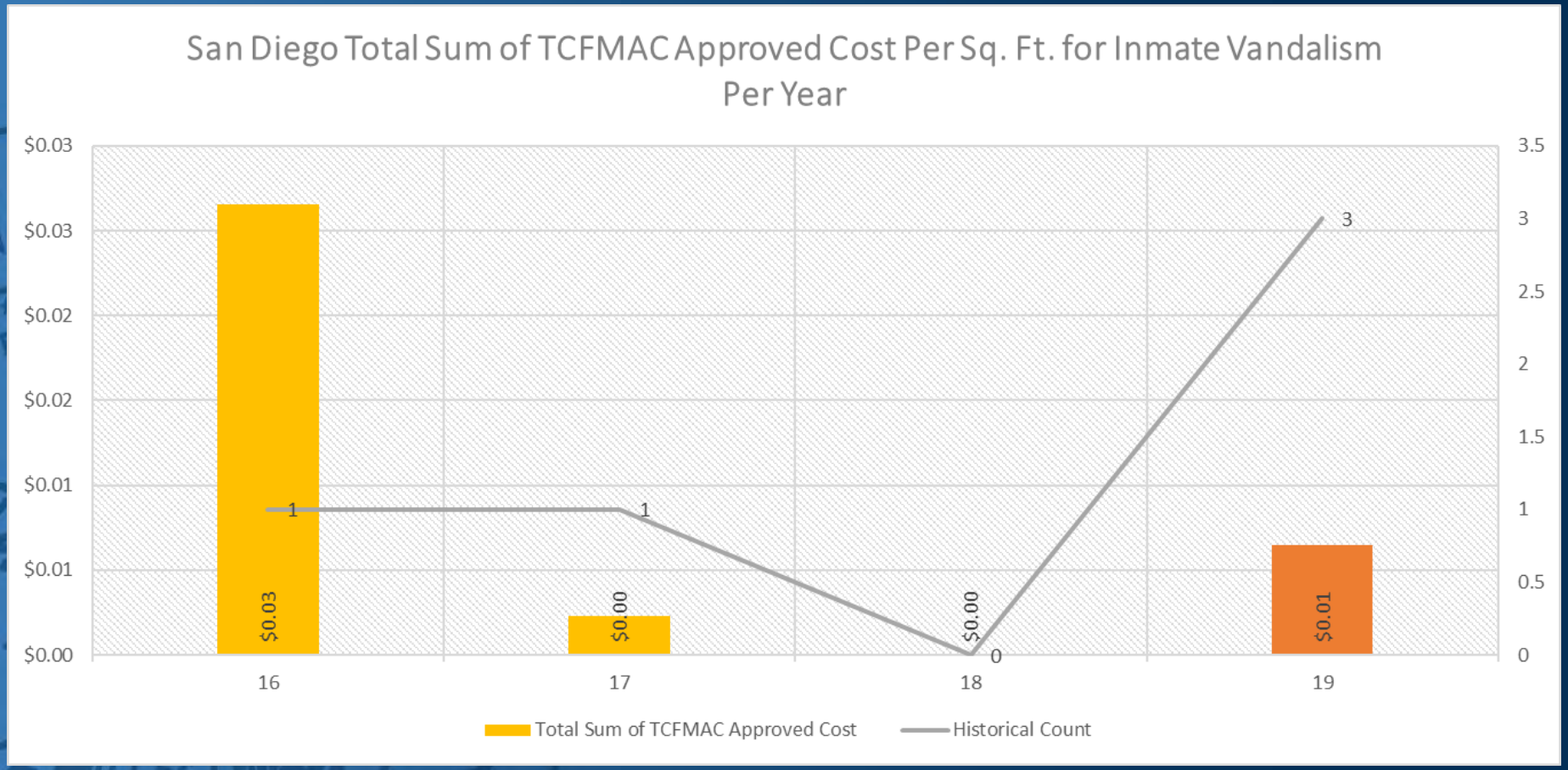

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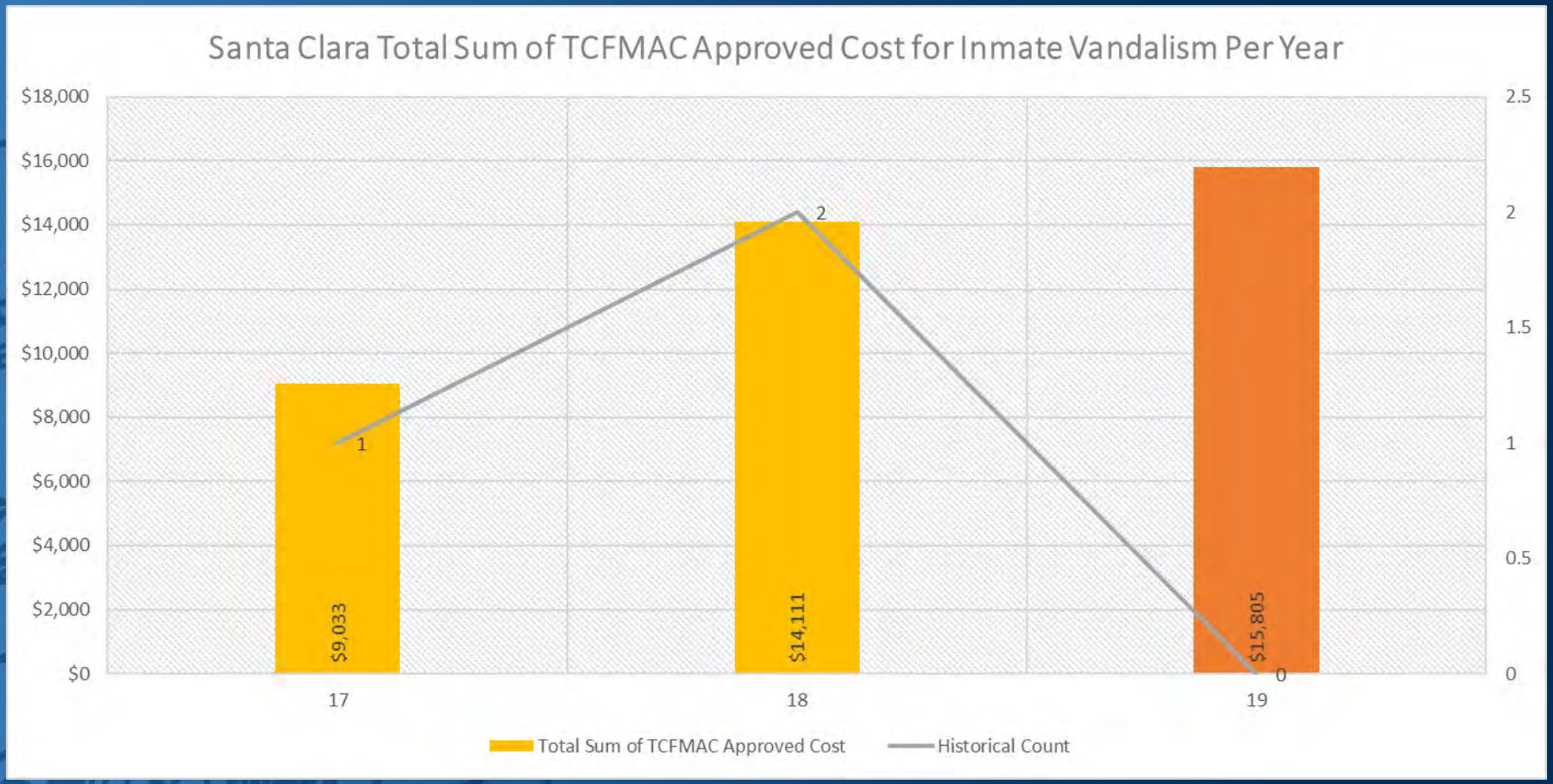
Discussion Item 3
5-Year Vandalism Analysis



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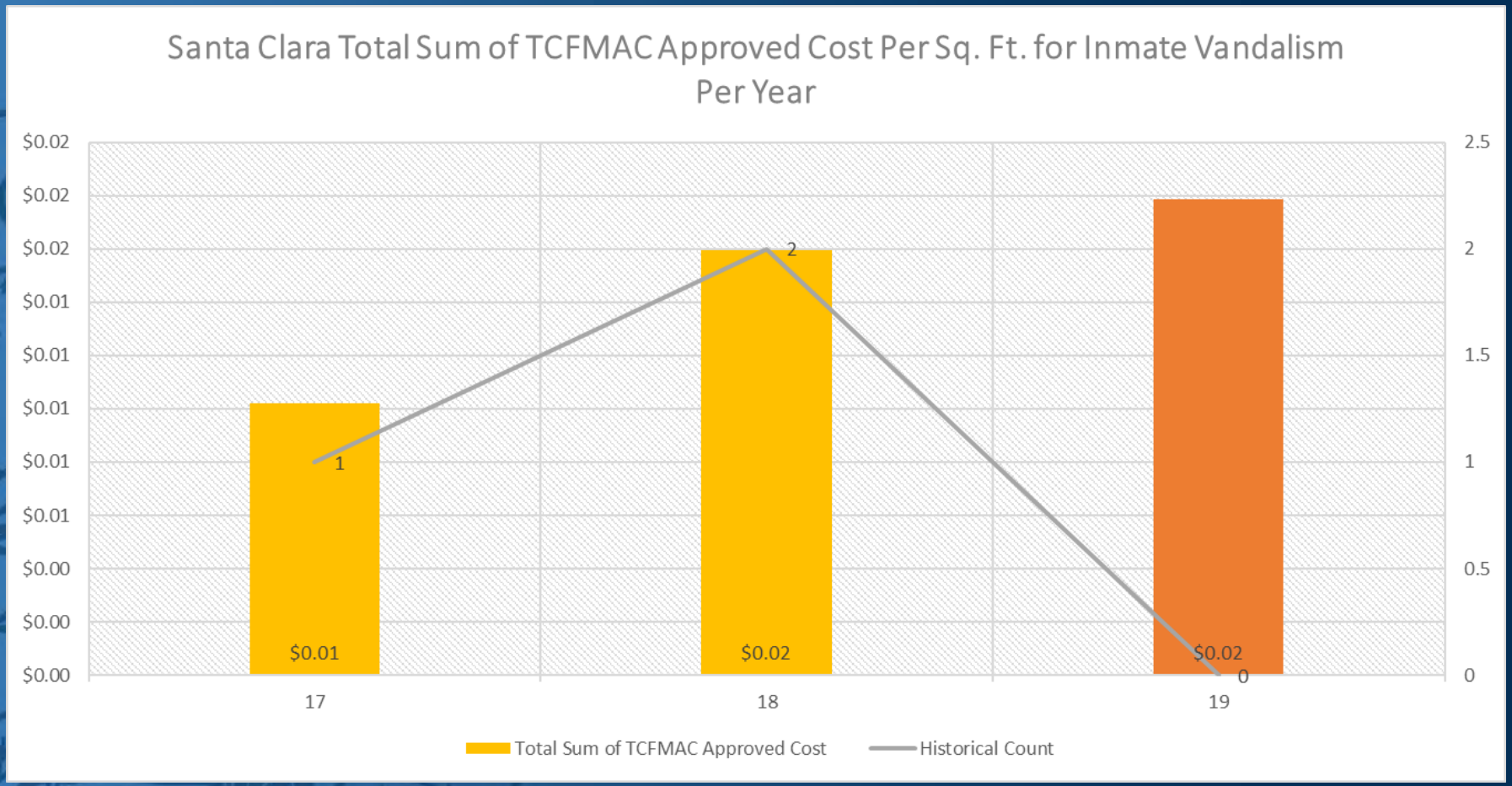
5-Year Vandalism Analysis



JUDICIAL COUNCIL OF CALIFORNIA

Discussion Item 3
5-Year Vandalism Analysis

Top 10 Buildlings with the Highest Count of FM's							
Rank	County	Building ID	Building Name	Count of FM's	Total Sum of TCFMAC App. Costs	Court Exclusive Sq. Ft. Per County	Total Sum of TCFMAC Per Court Exclusive Sq. Ft.
1	Alameda	01-B3	Wiley W. Manuel Courthouse	14	$128,584	707,013	$0.182
2	Los Angeles	19-C1	Torrance Courthouse	9	$216,971	4,935,553	$0.044
3	Alameda	01-J1	New East County Hall of Justice	8	$62,251	707,013	$0.088
4	Los Angeles	19-AG1	Compton Courthouse	6	$122,997	4,935,553	$0.025
5	Los Angeles	19-AX2	Van Nuys Courthouse West	5	$67,230	4,935,553	$0.014
6	Los Angeles	19-L1	Clara Shortridge Foltz Criminal	5	$120,973	4,935,553	$0.025
7	Orange	30-A1	Central Justice Center	4	$83,895	796,557	$0.105
8	Los Angeles	19-J1	Pasadena Courthouse	4	$82,573	4,935,553	$0.017
9	Los Angeles	19-AK1	Norwalk Courthouse	4	$76,158	4,935,553	$0.015
10	San Diego	37-E1	Juvenile Court	3	$45,386	1,672,981	$0.027

Discussion Item 3
5-Year Vandalism Analysis

Top 10 Buildlings with the Highest Sum of TCFMAC App. Cost Per County Sq. Ft.							
Rank	**County**	**Building ID**	**Buildling Name**	**Count of FM's**	**Total Sum of TCFMAC App. Costs**	**Court Exclusive Sq. Ft. Per County**	**Total Sum of TCFMAC Per Court Exclusive Sq. Ft.**
1	Alameda	01-B3	Wiley W. Manuel Courthouse	14	$128,584.00	707,013	$0.182
2	Orange	30-A1	Central Justice Center	4	$83,895.29	796,557	$0.105
3	Alameda	01-J1	New East County Hall of Justice	8	$62,250.62	707,013	$0.088
4	Alameda	01-C3	Juvenile Justice Center	1	$41,866.00	707,013	$0.059
5	Los Angeles	19-C1	Torrance Courthouse	9	$216,971.00	4,935,553	$0.044
6	Alameda	01-H1	Fremont Hall of Justice	2	$25,978.69	707,013	$0.037
7	Santa Cruz	44-A1	Main Courthouse	1	$3,377.00	97,142	$0.035
8	Solano	48-A1	Hall of Justice	1	$6,467.00	191,461	$0.034
9	Yolo	57-A10	Yolo Superior Court	2	$5,775.00	189,596	$0.030
10	San Diego	37-E1	Juvenile Court	3	$45,386.00	1,672,981	$0.027

Discussion Item 3
5-Year Vandalism Analysis
Conclusion

- Top 5 highest costing counties include:
  - LA, Alameda, Orange, SD, Santa Clara
- Alameda is currently ranked 9th in amount of Court Exclusive Sq. Ft. state-wide but is the highest costing county per Court Exclusive Sq. Ft.
  - Alameda's predicted 2019 total TCFMAC Approved Cost is expected to rise above the county's 5 year historic maximum.
  - Alameda's Wiley W. Manuel Courthouse has the highest number of FM's, costing a total of $128,584 for 196,277 sq. ft. within the 2014-2019 Fiscal Years.
  - Alameda's Wiley W. Manuel Courthouse is also the highest costing building per Court Exclusive Sq. Ft. per county for FYs 2014-2019.

Discussion Item 4
Director's Report

- Director's Report

JUDICIAL COUNCIL
OF CALIFORNIA

Information-Only Item 1
DMF-1 Project List Update

Project Status	Number of Projects	Original Estimate	Current Amount
Roof Projects			
Design Phase	1	$ 139,000	$ 50,317
Completed	25	$ 8,500,000	$ 23,679,738
Subtotal	**26**	**$ 8,639,000**	**$ 23,730,055**
Elevator Projects			
Construction Phase	5	$ 4,806,000	$ 8,331,730
Completed	3	$ 14,549,000	$ 15,114,996
Subtotal	**8**	**$ 19,355,000**	**$ 23,446,725**
Grand Total	**34**	**$ 27,994,000**	**$ 47,176,780**

JUDICIAL COUNCIL OF CALIFORNIA

Information-Only Item 2

DMF-2 Project List Update

Project Status	Number of Projects	Original Estimate	Current Amount
Roof Projects			
Design Phase	-	$ -	$ -
Bidding Phase	2	$ 676,000	$ 676,000
Awaiting for Shared Cost Letter	3	$ 7,801,975	$ 7,801,975
Construction Phase	2	$ 752,857	$ 752,857
On Hold		$	$
Contractor Procurement Phase	-	$ -	$ -
Future Funding	-	$ -	$ -
Completed	-	$ -	$ -
Cancelled	-	$ -	$ -
Subtotal	**7**	**9,230,832**	**9,230,832**
Elevator Projects			
Design Phase	5	$ 3,384,181	$ 3,384,181
Bidding Phase	5	$ 2,093,098	$ 2,093,098
Awaiting for Shared Cost Letter	1	$ 276,651	$ 276,651
Construction Phase	8	$ 14,861,299	$ 14,968,851
On Hold	-	$ -	$ -
Contractor Procurement Phase	-	$ -	$ -
Bidding Phase	-	$ -	$ -
Awaiting for Shared Cost Letter	-	$ -	$ -
Construction Phase	-	$ -	$ -
On Hold	-	$ -	$ -
Contractor Procurement Phase	-	$ -	$ -
Subtotal	**19**	**20,615,227**	**20,722,780**
BAS Projects			
In Procurement for Assessment	28	$ 26,250,636	$ 26,250,636
Subtotal	**28**	**$ 26,250,636**	**$ 26,250,636**
Building Assessment			
Completed	1	$ 5,000,000	$ 5,000,000
Subtotal	**1**	**$ 5,000,000**	**$ 5,000,000**
Grand Total	**55**	**$ 61,096,695**	**$ 61,204,247**

Information-Only Item 3
DMF-3 Project List Update

Project Status	Number of Projects	Original Estimate	Current Amount
Fire Alarm System Projects			
In Procurement for Assessment	8	$ 10,381,763	$ 10,381,763
Plan Review	1	$ 4,618,237	$ 4,618,237
Subtotal	9	$ 15,000,000	$ 15,000,000
Grand Total	**9**	**$ 15,000,000**	**$ 15,000,000**

JUDICIAL COUNCIL OF CALIFORNIA

Information-Only Item 4
Architectural Revolving Fund Projects Update

- Refer to materials for report

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Information-Only Item 5
FM Budget Reconciliation Report

- Refer to materials for report

JUDICIAL COUNCIL
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Information-Only Item 6
Sustainability Plan

Facilities Services
Sustainability Unit

Purpose and Opportunities

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Sustainability Plan

Our need for a Sustainability Unit has historically been **primarily focused** on **saving money.**

However, a variety of human activities led to an increased number of extreme **climate events** that are **negatively impacting the Judicial Branch**. The branch recently felt the impact of climate change in two ways:

1) **Directly from fires/floods**; and
2) **Indirectly from Public Safety Power Shutoffs (PSPS)**

Many state initiatives have long been driving comprehensive resource efficiency measures to demonstrate climate change mitigation solutions.

We believe endorsing some of these measures is **good for us**, **good for the state**, and **good for the planet**.

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Sustainability Plan

Opportunity: New Construction

85% of our portfolio consists of buildings with a Facility Condition Assessment (FCA) of **Poor.** The infrastructure needs of those buildings are many, including: roofing, HVAC, plumbing and Fire Life Safety.

Given that reality, our New Construction Program is a major way to **impact the energy and carbon intensity of our portfolio.**

Our **overarching goal** is to achieve **a commitment to updated new construction practices** that help to reduce the Judicial Branch contribution to **climate change.**

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Sustainability Plan
Additional Opportunities: Existing Portfolio

Expansion of Effort

We propose **continuation and expansion of current energy efficiency efforts** through use of dedicated energy-saving third-party funding avenues.

Alignment of Effort

Align energy saving objectives with **FCA report** findings (2019) and **lifecycle renewals of building assets** to diminish competition of resources for those needs.

Execution of Effort

The following slides outline **our specific goals** for sustainability, **CA policy initiatives**, **our current efforts,** and **strategies** to achieve our goals

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Sustainability Plan
Sustainability Core Goals

1. Ensure compliance with sustainability initiatives in all new construction;
2. Reduce energy usage, our carbon footprint, and our utility costs by:
   a. Educating staff, key stakeholders and service providers on energy saving practices specifically and broader sustainability issues;
   b. Pursuing energy efficiency measures;
   c. Conserving other resources;
   d. Improve the power resiliency of our portfolio through renewable energy systems.

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Sustainability Plan
Defining Energy Use Intensity (EUI)

Site Energy Use

The annual measured amount of all the energy a building consumes onsite, as reported on utility bills.

$$\text{Site EUI} = \frac{\text{Site Energy Use}}{\text{Property Square Foot}}$$

Source Energy Use

The annual measured amount of all the raw fuel required to operate a building, including losses that take place during generation, transmission, and distribution of the energy

$$\text{Source EUI} = \frac{\text{Source Energy Use}}{\text{Property Square Foot}}$$

Lower number means more efficient use

$$\frac{\text{Annual Building Energy Use (converted to kBtus)}}{\text{Building Area (ft2)}} = \text{EUI}$$

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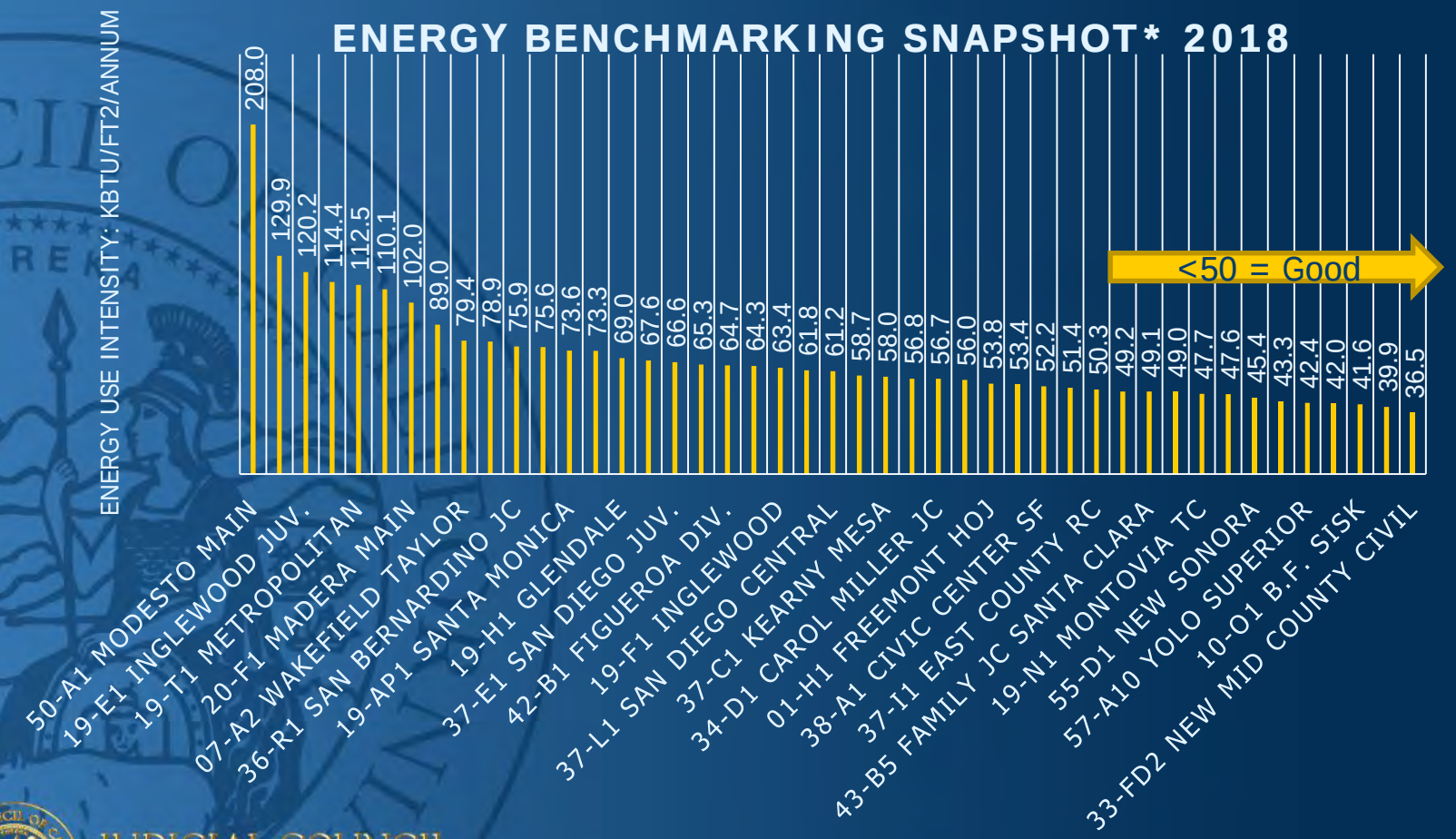
Sustainability Plan
Judicial Council Site Energy Use Intensity (EUI)



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**Data presented only includes 40 JCC-owned buildings (44% of our total JCC-owned portfolio SF) and 6 capital projects (yellow bar) for which we currently have EUI information available*

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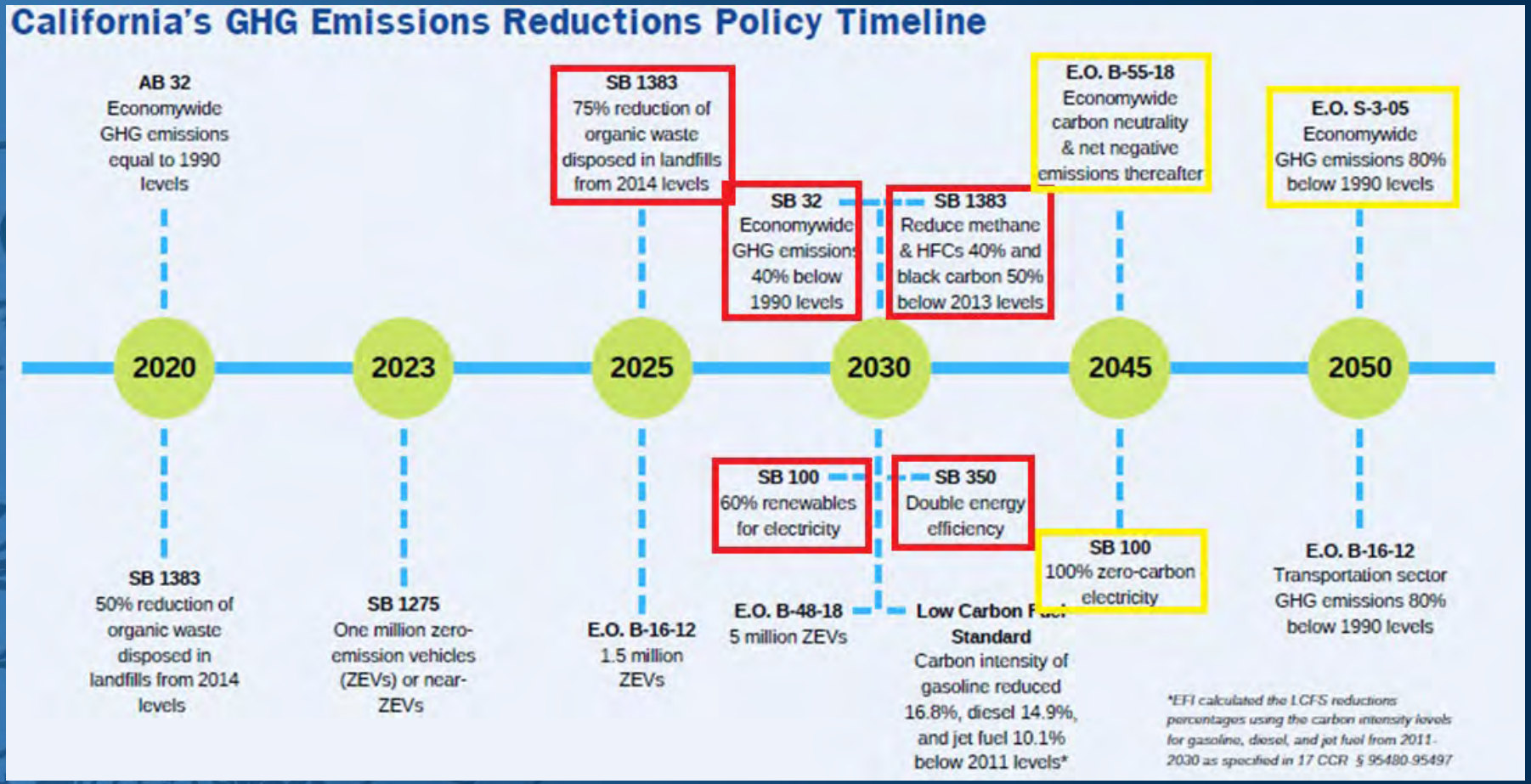
Sustainability Plan



Source: EFI, 2019

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Sustainability Plan
JCC's Current Efforts

- Lighting Retrofit Projects
  - 38 Courthouses, 3.5 million square feet (SF)
  - 2,306 tons CO_2 Reduction to date, or
  - 4% reduction of 18-19 emission estimates
  - $1.5 million annual cost savings
- Solar Feasibility Assessments
- Power-Resiliency Assessments in PG&E Territory
- Data Driven Programming (Benchmarking & Compliance)

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Sustainability Plan
Strategies to achieve our Goals

1. Formalize New Construction Sustainability Requirements, including an Energy Usage Intensity (EUI) Target as part of the California Trial Courts Facilities Standard (2020)
2. Educate judicial branch staff on resource conservation opportunities
3. Utilize Third-Party Financing options for Energy Efficiency Projects
4. Improved data collection methods to determine usage baselines (energy, carbon, water, waste)

Meeting Calendar

Next Meeting

Date	Day of Week	Type of Meeting
January 27, 2020	Monday	In Person
March 9, 2020	Monday	Phone
April 13, 2020	Monday	In Person
May 15, 2020	Friday	In Person
July 20, 2020	Monday	In Person
August 31, 2020	Monday	Phone
October 22-23, 2020	Thu - Fri	In person (location TBD)
December 7, 2020	Monday	Phone

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Adjourn to Closed Session

- Closing Discussions
- Chair Closing Comments

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