PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Communications Division **RESOLUTION T-17805**
Broadband, Video and Market Branch **December 14, 2023**

R E S O L U T I O N

RESOLUTION T-17805: Approval of five (5) public housing infrastructure projects for grant funding from the California Advanced Services Fund's Broadband Public Housing Account totaling $441,374.

I. SUMMARY

This Resolution approves grant funding in the amount of $441,374 from the California Advanced Services Fund (CASF) Broadband Public Housing Account (BPHA) for five projects from four applicants. These five projects will deploy both wireless and wired broadband infrastructure utilizing wi-fi and cat-6[1] inside-wiring capable of 25 Megabits per second (Mbps) download and 3 Mbps upload for 256 living units in these publicly supported housing developments. The deployment of broadband in public housing for the purpose of offering free internet access to those who do not already have access to a free broadband network will improve public safety by providing enhanced access to government, e-health, and online education opportunities.

Table 1, below, lists the five public housing infrastructure grants approved, and Appendix A shows a map of proposed project locations.

[1] A twisted pair copper cable for ethernet and other networking physical layer under the standard TIA/EIA-568-B.2-1, which was ratified by the TIA/EIA in June 2002. CAT6 provides higher performance than CAT5e and features more stringent specifications for crosstalk and system noise.

Table 1						
Applicant	**Project Name**	**Address**	**City**	**Zip**	**Grant**	**Units**
EAH Inc.	Cathedral Gardens	638 21st Street	Oakland	94612	$142,117.00	100
Housing Authority of San Luis Obispo	Paso Robles Homekey	1134 Black Oak Dr	Paso Robles	93446	$55,296.00	54
Las Palmas Housing and Development Corporation	Tres Lagos Apartments I	23355 Catt Rd.	Wildomar	92595	$214,411. 00	89
People's Self-Help Housing	Brizzolara Street	537 Brizzolara Street	San Luis Obispo	93401	$14,750.00	5
People's Self-Help Housing	Ellwood	360 Ellwood Beach Drive	Goleta	93117	$14,800.00	8
			Total		**$441,374.00**	**256**

II. BACKGROUND

On May 19, 2022, the Commission issued Decision (D.) 22-05-029 which implemented changes to the BPHA enacted by Senate Bill 156 and programmatic changes for publicly supported housing developments, including farmworker housing, and allocated $15 million funding for Fiscal Year 2023-2024.

Key provisions of the Decision relevant to this Resolution include:

- The Commission authorized CD staff (Staff) to review and approve applications through ministerial review that meet all of the ministerial review criteria.[2] Applications not meeting the ministerial review criteria may still be considered for a grant but may only be approved by the Commission via Resolution.
- Grants can be awarded to finance up to 100 percent of the installation costs (inside wiring and equipment), but not maintenance or operation costs.
- Grantees must maintain and operate the network for five years after project completion.

[2] D.22-05-029, Appendix 1, p. 11

- The proposed network is capable of offering residents Internet service speeds of at least 25 Mbps download and 3 Mbps upload service for an average user during peak and off-peak hours or current state standard, whichever is higher.[3]
- Applicant attests that no broadband service provider offers free service that meets state standards, as defined in Section III of the BPHA Guidelines, to the subject low-income community.
- Applicant attests that it will not charge residents for broadband internet services.
- Applicant agrees to complete the project within 12 months from the date of Commission approval.
- Applicant has an identified internet service provider with the required internet bandwidth capacity at the Minimum Point of Entry (MPOE).
- Applicant attests that the low-income community project to be in residential use as low-income community for at least 10 years.

III. APPLICANTS' REQUEST

On July 1, 2023, EAH Inc. (EAH) (1 project), Housing Authority of San Luis Obispo (HASLO) (1 project), Las Palmas Housing and Development Corporation (Las Palmas) (1 project), and People's Self-Help Housing (PSHH) (2 projects) submitted applications for CASF BPHA funding. All five projects exceed the cost per unit benchmark established in the ministerial review criteria in D.22-05-029 and are therefore ineligible for ministerial review and are addressed in this Resolution.

Applicants: All four applicants are eligible applicants as defined in D.22-05-029.[4]

EAH has been approved by the IRS as a 501(c)(3) nonprofit organization for providing affordable housing since 1968. EAH has developed partnerships in 87 municipalities within 23 counties throughout California and Hawaii, serves over 25,000 residents in over 13,000 units.

HASLO has been approved by the IRS as a 501(c)(3) nonprofit organization for providing affordable housing since 1968. HASLO currently assists over 3,000 veterans, families, seniors and disabled each month.

Las Palmas Housing and Development Corporation has been approved by the IRS as a 501(c)(3) nonprofit organization for providing affordable housing since 2001. Las Palmas

[3] Peak hours mean 7 p.m. to 11 p.m. local time.; https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-eleventh-report

[4] D.22-05-029, Appendix 1, p. 5.

serves over 12,400 residents at 62 affordable housing communities across the state of California.

PSHH has been approved by the Internal Revenue Service (IRS) as a 501(c)(3) nonprofit organization for providing affordable housing since 1971. PSHH serves low-income households, families, farmworkers, seniors, and veterans and currently manages over 2,000 rental units.

Projects: All five projects are eligible projects as defined in D.22-05-029.

EAH and HASLO request funding for the installation of a wireless 2.4GHz and 5GHz WiFi 802.11AX network architecture utilizing Cambium, Cisco, Ruckus and Ubiquiti WiFi access points and switches, to provide wireless broadband coverage to each residential unit.

According to EAH and HASLO, these installations will be able to provide a minimum download speed of 25 Mbps and minimum upload speed of 3 Mbps during peak use hours.

Las Palmas requests funding for Intermediate Distribution Frame (IDF) that connect to Main Distribution Frame (MDF)build-out and inside-wiring to each residential unit for its 802.11AX WiFi network.

According to Las Palmas, these installations will be able to provide a minimum download speed of 25 Mbps and minimum upload speed of 3 Mbps during peak use hours.

PSHH requests funding for the installation of wired switched ethernet network architecture using cat-6 inside-wiring to deploy broadband service to each residential unit.

According to PSHH, these installations will be able to provide a minimum download speed of 25 Mbps and minimum upload speed of 3 Mbps during peak use hours.

All five projects include equipment for broadband traffic management, deployment, security, monitoring and reporting, consisting of layer 2 or layer 3 switches and a firewall that interfaces to the Wide Area Network Internet Service Provider (ISP) equipment providing the broadband service.

III. NOTICES

On July 31, 2023, Staff posted the proposed project descriptions on the Commission's BPHA webpage.[5]

IV. PROJECT REVIEW

The Wireless installations for EAH and HASLO, which use the latest WiFi standards, require more expertise to properly design, configure and deploy the wireless equipment to meet the coverage needs of multiple housing facilities and to properly interface together as a local area network to connect to the ISP. In addition, the wireless mesh[6] equipment utilized in wireless installations for the HASLO project is more resilient, as it can be self-adapting to changes in wireless conditions. The use of the latest WiFi standard[7] in all these projects offers greater throughput and wireless link management capability and can carry more traffic.

The projects propose multiple Intermediate Distribution Frame (IDF)[8] that connect to Main Distribution Frame (MDF)[9] in a star network topology.[10] Each IDF will serve as the local collection point for the distributed access points, providing wireless coverage to the residential units in each housing facility. Projects utilize wired connections to bring IDFs back to the MDF, to connect to the IDFs that serve each building.

IDFs distribute WiFi access equipment to serve the buildings, and the Ruckus and Ubiquiti wireless equipment being proposed are WiFi access points that use 802.11AX standard. In addition, the Ruckus Wireless equipment being proposed are wireless mesh capable WiFi access points that use 802.11AX standards. All of the access points include the latest technology advancements that greatly improve capacity and performance by

[5] https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/casf-adoption-and-access/bpha/july-2023-broadband-public-housing-account-grant-request.pdf

[6] A mesh network is a network composed of multiple nodes that work together as one large system. In WiFi networks, mesh is a feature of an automated path selection among the distributed wireless access points to their destination for the most optimal path.

[7] 802.11AC Wave2 (WiFi-5 wave2) or 802.11ax WiFi standard per BPHA guidelines, p.2.

[8] Intermediate Distribution Frame (IDF) is a localized hub and a cable distribution point, typically a rack or a cabinet, which brings internal lines to all locally distributed computing devices to the Main Distribution Frame.

[9] The Main Distribution Frame (MDF) is the centralized distribution point for all IDFs and is the terminating point for all of the computing devices within the local network. The MDF connects and manages telecommunications between the local facility and the outside world.

[10] A star network is a network topology in which all nodes of computing devices are directly connected to a common central location. A star network is often referred to as a hub-and-spoke. https://en.wikipedia.org/wiki/Star_network#/media/File:Star_Topology.png

enabling more simultaneous connections and a more thorough use of spectrum[11], while maintaining backwards compatibility to older WiFi standards.

The wireless mesh equipment utilized in these projects is more costly but provides the flexibility and scalability for future expansion. All proposed wireless projects are 100 Mbps download/20 Mbps upload speed ready. In addition, with a minor hardware upgrade[12], all proposed wireless projects are capable of exceeding 100 Mbps download/20 Mbps upload speed, with better speeds for the wireless projects using the 802.11AX WiFi standard.[13]

The Las Palmas project will be deploying IDF and MDF build-outs and interconnections between several residential buildings using single-mode fiber and will also be deploying cat-6 inside-wiring to each residential unit. The deployed IDF and MDF distribution points will be connected to Las Palmas' 802.11AX WiFi network via matching funds.

The project is 100 Mbps download/20 Mbps upload ready. In addition, this project is capable of exceeding 100 Mbps download/20 Mbps upload speed with a minor hardware upgrade.

The wired installations for the PSHH projects propose installation of a wired switched ethernet network in a star topology. This installation utilizes cat-6 inside-wiring to connect each residential unit in a building to multiple IDFs that serve these buildings, which then connect to the MDF that interfaces with the ISP.

While the deployment of inside wiring to each residential unit is labor intensive, the simplicity of network configuration and installation offsets the higher complexity and cost of the wireless projects. The projects propose layer 3 switching equipment and firewall equipment to manage, deploy and monitor the broadband traffic.

All proposed wired projects are 100 Mbps download/20 Mbps upload ready. In addition, these projects are capable of exceeding 100 Mbps download/20 Mbps upload speed with a minor hardware upgrade.

[11] https://www.wi-fi.org/discover-wi-fi/wi-fi-certified-6

[12] Based on the proposed engineering designs submitted, for the wired projects using switched ethernet technology and wireless projects using 802.11ax WiFi technology, upgrading the layer 2/layer 3 switching equipment and the firewall equipment would enable speeds greater than 100 Mbps download/20 Mbps upload toward gigabit capability.

[13] All WiFi access point hardware proposed are 802.11ax (WiFi-6) based.

The wireless projects listed access limitations within the property as the primary reason for choosing wireless deployment. The complexity, labor and material cost[14] of wireless deployment has been rising thus increasing the project costs but remains a viable and less costly engineering option of system deployment as compared to direct connection, when heavy construction is required that involve structural modification, trenching, laying conduits, feedthrough and backfill. In addition, wireless bridge connections, when utilized, can be engineered and deployed relatively quickly, as compared to heavy construction, which often require review and approvals in addition to lengthy project planning.

In addition, the unusual market conditions of the past few years[15,16, 17] (supply crunch, high commodity prices, shortage of labor force, high energy cost) continue to linger, and the program savings encouraged through the use of the economy of scale via the unit caps continue to fall behind, as a result of the rapid inflationary pressures in the marketplace.

Based on staff research discussed above, Staff finds the reasons for the extra cost per unit reasonable and recommends approval.

V. COMPLIANCE REQUIREMENTS

EAH, HASLO, Las Palmas, and PSHH are required to comply with all the guidelines, requirements, and conditions associated with the grant of CASF funds as specified in D. 22-05-029. Such compliance includes, but is not limited to the following:

A. California Environmental Quality Act (CEQA)

All CASF grants are subject to CEQA requirements unless the projects are statutorily or categorically exempt pursuant to the CEQA Guidelines.

All five projects require limited modifications of existing structures.

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[14] Applicants in Table 1 have indicated that projects are experiencing high material costs and supply chain delays.

[15] https://research.stlouisfed.org/publications/review/2022/02/07/global-supply-chain-disruptions-and-inflation-during-the-covid-19-pandemic

[16] https://www.reuters.com/business/global-inflation-stay-stubbornly-high-wrecked-supply-chains-persist-2022-04-28/

[17] https://www.whitehouse.gov/cea/written-materials/2021/07/06/historical-parallels-to-todays-inflationary-episode/

The wireless projects are based on 802.11ac Wave2 and 802.11ax wireless network architectures consisting of ISP Modem(s), network switching equipment and wireless access points. This requires installation/mounting of equipment in existing structures such as ceilings or rooftops.

The hybrid projects that use both wired and wireless network architecture consists of ISP modem(s), networking switching equipment and wireless routers. This requires installation/mounting of equipment in existing structures, such as ceilings or rooftops and installation of cat-6 inside-wiring and conduits on existing structures such as walls, hallways, or in the roof.

Based on the above information, these projects meet the criteria of the CEQA categorical exemption for existing facilities (CEQA Guidelines § 15301) and CEQA Guidelines Section 15303 – New Construction or Conversion of Small Structures, involving construction, installation, and/or conversion of limited numbers of new and/or existing facilities/structures.

B. Execution and Performance

EAH, HASLO, Las Palmas, and PSHH must start the projects within 30 days from the date this Resolution is approved and complete the project within a 12-month timeframe. Should the grantee or Contractor fail to begin work within 30 days of grant approval, the Commission or Director of Communications Division, upon 5 days written notice to the grantee, reserves the right to terminate the award. If the grantee is unable to complete the proposed project within the required 12-month timeframe, it must notify the Commission as soon as it becomes aware of this prospect. If such notice is not provided, the Commission reserves the right to reduce or withhold payment for failure to satisfy this requirement.

Grantees must operate and maintain the network for a minimum of five years after it has been installed. The grantee must complete all the performance on the project before the termination date in accordance with the terms of approval granted by the Commission. In the event that EAH, HASLO, Las Palmas, and PSHH fail to complete the project or subsequently operate and maintain the network service in accordance with the terms of approval granted by the Commission and compliance with the CASF program guidelines, EAH, HASLO, Las Palmas, and PSHH must reimburse some or all of the CASF BPHA funds that it has received.

EAH, HASLO, Las Palmas, and PSHH must sign a consent form within 30 days from the date of the award agreeing to the terms stated in the Resolution authorizing the CASF

award. Should EAH, HASLO, Las Palmas, and PSHH not accept the award through failure to submit the consent form within 30 calendar days from the date of the award, the Commission will deem the grant null and void.

Material changes in the entries for this application, such as discontinuing operation or bankruptcy, or change of name (DBA), change of address, telephone, fax number or e-mail address must be reported immediately by a letter to the CPUC, Director of the Communications Division, 505 Van Ness Avenue, San Francisco, CA 94102.

C. Project Audit

The Commission has the right to conduct any necessary audit, quality check, verification, and discovery during project implementation and post-project completion to ensure that CASF funds are spent in accordance with the terms of approval granted by the Commission. Invoices submitted will be subject to financial audit by the Commission at any time within 5 years of the release of the final payment. [18]

D. Reporting

EAH, HASLO, Las Palmas, and PSHH are required to submit a project status report within six months of the project award date if the project has not been completed, irrespective of whether the grantee requests reimbursement or payment. Project status reporting requirements can be found at the Commission's website.[19] EAH, HASLO, Las Palmas, and PSHH must identify foreseeable risks that might prevent it from meeting future milestones. Before full payment of the project EAH, HASLO, Las Palmas, and PSHH must submit a project completion report. EAH, HASLO, Las Palmas, and PSHH shall also include speed test results in its completion report. EAH, HASLO, Las Palmas, and PSHH must certify that each progress and completion report is true and correct under penalty of perjury.

EAH, HASLO, Las Palmas, and PSHH are required to maintain the broadband network for five years after it has been installed. After installation, for a five-year period, they must also submit quarterly reports showing the percentage of up time, the number of unique log-ons (either by individuals or by units) and the amount of data used.[20]

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[18] D. 22-05-029, Appendix 1, p. 16.

[19] https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone/california-advanced-services-fund/casf-public-housing-account

[20] D.22-05-029 Appendix 1, p. 14.

E. Payments

Submission of invoices from and payments to EAH, HASLO, Las Palmas, and PSHH shall be made at completion intervals in accordance with D.22-05-029, Section X, Appendix 1 and according to the guidelines and supporting documentation required in D.22-05-029. Project status and completion reports must be submitted with all required supporting documentation in order to receive payment. Payments are based on submitted receipts, invoices and other supporting documentation showing expenditures incurred and work done on the project in accordance with the approved CASF funding budget included in the application. EAH, HASLO, Las Palmas, and PSHH must submit a project completion report before full payment. Final requests for payment must be submitted no later than 90 days after project completion.

Payment to EAH, HASLO, Las Palmas, and PSHH will be made in accordance with, and within the time specified in California Government Code § 927 *et seq.*

If any portion of reimbursement is found to be out of compliance, EAH, HASLO, Las Palmas, and PSHH will be responsible for refunding any disallowed amount along with appropriate interest rates determined in accordance with applicable Commission decisions.

VI. SAFETY CONSIDERATIONS

The deployment of affordable broadband in public housing will improve access to government and e-health services, which improves safety.

VII. COMMENTS

In compliance with Public Utilities Code, § 311(g)(1), a Notice of Availability was e-mailed on November 9, 2023, informing all parties on the CASF Distribution List of the availability of the draft of this Resolution for public comments at the Commission's website at http://www.cpuc.ca.gov/. This letter also serves to inform parties that the final conformed Resolution the Commission adopts will be posted and available on this same website.

VIII. FINDINGS

1. On July 1, 2023, EAH, HASLO, Las Palmas, and PSHH submitted applications for five projects totaling $441,374 for CASF funding.

2. All five projects exceed the cost per unit benchmark established in the ministerial review criteria and are therefore ineligible for ministerial review.

3. Based on its review, Staff determined that all five projects meet BPHA eligibility requirements. Staff further determined that all five projects qualify for funding under BPHA guidelines per D.22-05-029 and recommends approval of all five projects.

4. The Commission has determined that these projects are categorically exempt from CEQA review, under section 15301 regarding exemption for existing facilities and section 15303 regarding minor modifications to existing structures.

5. A notice letter was e-mailed on November 9, 2023, informing all applicants filing for CASF funding, parties on the CASF distribution list of the availability of the draft of this Resolution for public comments at the Commissions website found here http://www.cpuc.ca.gov/PUC/documents/.

THERFORE, IT IS ORDERED that:

1. The Commission shall award the following grant amounts for the projects listed in Table 1:

    - $142,117.00 to EAH Inc. for one project;
    - $ 55,296.00 to HASLO for one project;
    - $ 214,411.00 to Las Palmas for one project;
    - $ 29,550.00 to PSHH for two projects;

    The total grant award is $441,374. All awards are based on the descriptions of the projects as described herein and are predicated on commitments to install and operate broadband infrastructure as expressed in its application and compliance with the requirements in as specified in D.22-05-029 and this Resolution.

2. Grant payments of up to a total $441,374 for these public housing projects shall be paid out of the CASF Public Housing Account in accordance with the guidelines adopted in D.22-05-029, including compliance with CEQA.

3. EAH, HASLO, Las Palmas, and PSHH must complete and execute the consent form agreeing to the conditions set forth in this Resolution within 30 calendar days from the date of the award. Failure to submit the consent form within 30 calendar

days from the date of the adoption of this Resolution will deem the grant null and void.

4. EAH, HASLO, Las Palmas, and PSHH must each submit quarterly progress reports on the status of the project irrespective of whether reimbursement or payment is requested.

5. EAH, HASLO, Las Palmas, and PSHH are required to maintain the broadband network for five years after it has been installed.

6. Payments to EAH, HASLO, Las Palmas, and PSHH shall each be in accordance with D.22-05-029, Section X, Appendix 1 and in accordance with the process defined in the "Payments" section of this Resolution.

7. EAH, HASLO, Las Palmas, and PSHH must each complete all performance under the award on or before 12 months from the date this Resolution is approved.

8. By receiving a CASF grant, EAH, HASLO, Las Palmas, and PSHH agree to comply with the terms, conditions and requirements of the grant and thus submits to the jurisdiction of the Commission regarding disbursement and administration of the grant.

9. EAH, HASLO, Las Palmas, and PSHH are each required to comply with all guidelines, requirements and conditions associated with the CASF funds award as specified in D.22-05-029, and in accordance with the terms of the Commission's approval as set forth in this Resolution.

10. If EAH, HASLO, Las Palmas, and PSHH fail to complete the project in accordance with the terms outlined in D.22-05-029 and this Resolution, EAH, HASLO, Las Palmas, and PSHH must reimburse some or all CASF funds it has received.

This resolution is effective today.

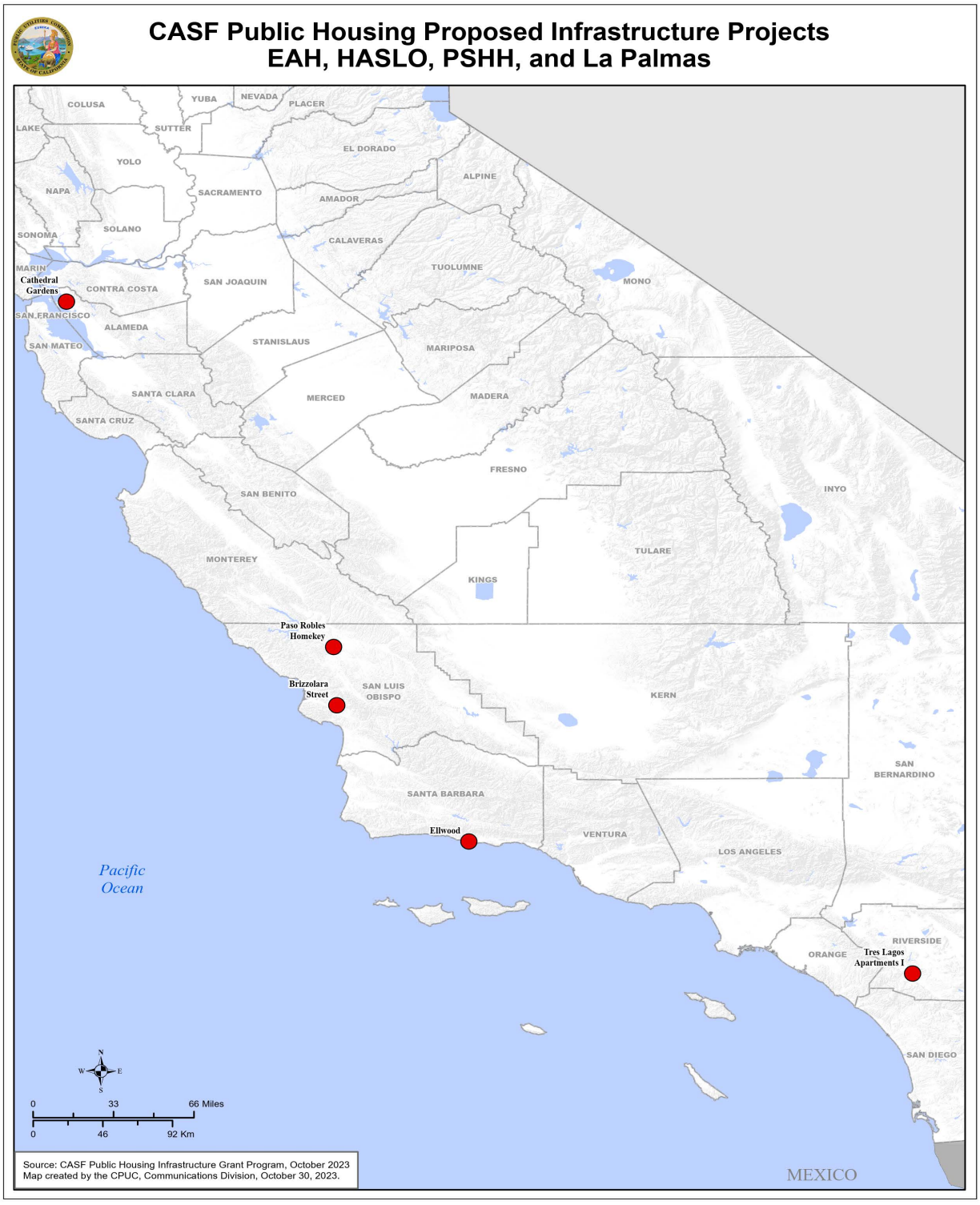
I certify that the foregoing resolution was duly introduced, passed, and adopted at a meeting of the Public Utilities Commission of the State of California held on

_____, the following Commissioners voting favorable thereon:

_____

RACHEL PETERSON
Executive Director

APPENDIX A
Resolution T-17805
Public Housing Projects Locations



End of Appendix A