Northern Sonoma County Air Pollution Control District

AB 617 Community Air Protection Program Implementation Grant Report

Grant # G23-CAPP-22 (Year 7)

Reporting period of June 15, 2024, through July 31, 2024.

Submitted to the California Air Resources Board on: July 31, 2025

I. Contact Information

California Air Resources Board Project Liaison:

Andrea Juarez
California Air Resources Board
Office of Community Air Protection
1001 I Street.
Sacramento, CA 95814
E-Mail: Andrea.Juarez@arb.ca.gov

District Grant Liaison:

Robert Bamford Northern Sonoma County Air Pollution Control District 625Center Street Healdsburg, CA 95448 Phone: 707-433-5911

E-Mail: Robert.Bamford@sonoma-county.org

II. Costs Associated with Specific Tasks

* All District staff time is donated and not included in reported expenditures.

^{*} Reporting period of June 15, 2024, to July 31, 2025, indicated in orange, below.

Work Task Description	Completed
Initial District Resolution for CAP participation.	06/06/2018
Grant G23-CAPP-22 executed (\$31,915.00).	11/22/2023
Grant G23-CAPP-22 funds received: - First disbursement (\$25,266.04) - Second disbursement (\$ 6,648.96)	10/11/2024 03/08/2024
1. Media release tool (Meltwater) (\$4,000.00)	09/23/2024
2. Annual license for three Clarity PM-2.5 sensors with meteorology. (\$8,212.50)	11/05/2024
3. Web site PDF and media ADA remediation (\$9,117.00)	08/29/2024
 New District mini grant program launched. (\$10,000 ear-marked for funds to be awarded. 	10/28/2024

5. Public Outreach Event at District Office	11/13/2024
6. Three mini-grant projects awarded \$2,000 each (\$6,000).	2/3/2025 3/19/2025 4/21/2025
7. CTR Mail campaign. Created Phase-1 letter and report forms. Mail campaign to print, stuff, and post via USPS. Two mail out events: Initial with reporting form (\$656.21) Reminder/final notice (\$288.14) Total \$944.35	5/19/2025 7/10/2025
8. CTR Database Integration with NSCAPCD stationary source database and for CEIDARS data format compatibility (\$2,098.60).	7/18/2025
Grant G23-CAPP-22 funds liquidated to date: (\$4,000.00 + \$8,212.50 + \$9,117.00 + \$6,000 + \$944.35 + \$2,098.60 = \$30,372.45)	7/31/2025
Grant G23-CAPP-22 anticipated date for liquidation of remaining funds \$1,542.55 .	6/30/2026
Grant G23-CAPP-22 fund liquidation and final report date.	6/30/2028

III. How Grant is Being Utilized

For Year 7, the District elected to:

- 1) improve its ability to perform media releases and provide air quality advisories;
- 2) implement a community air sensor program for PM-2.5 with meteorology instrumentation;
- 3) offer a new community mini grant program;
- 4) remediate all District web site PDFs and media to accessibility standards with certification;
- 5) host a community outreach event at the new District office;
- 6) develop and launch a community mini grant program;
- 7) develop and launch mail campaign for emission reporting; and
- 8) develop District database integration for Phase-1 Criteria and Toxics Reporting (CTR).

The NSCAPCD was not selected by CARB for a community project, nor does it have a disadvantaged community.

IV. Summary of Work Completed

- 1. Media Release Project. There is a general expectation by the public that air districts will provide media releases and advisories during wildfire events, significant air quality events, and broadly announce grants and incentives programs. This is challenging as media points of contact (POC) change often and simply establishing and maintaining a relevant and current list of print, online, television, radio, and multi-lingual media contacts is difficult and time consuming. For this project, the District licensed "Meltwater" for a year. Meltwater is a media platform that maintains current media POCs based on geography and topic across all media platforms and languages and includes a mail tool for sending out the media messages. This media tool has been most useful in practice for advertising District and CARB incentive and grant programs and advisories during wildfire smoke events.
- 2. Clarity Community Sensors Project. The District deployed three "Clarity" brand PM-2.5 sensors with meteorological equipment alongside the District's three PM-10 monitors. These three sites cover the populated communities of the District: Healdsburg, Guerneville, and Cloverdale. These sensors are more robust than the Purple Air brand sensors in that they are specifically calibrated to a location and do not rely on outlet power to remain operable and to collect data, which is very useful during wildfire and PSPS events when power is shutdown. The Clarity sensors are paired with meteorological equipment that provides pollution wind roses that measure the concentration and direction that PM-2.5 pollution comes from in real time. These (3) sensors are now available on the airnow.gov and fire.airnow.gov sites, which is a new option for Clarity sensors. These instruments and their software tools help the District forecast smoke events, create air quality advisories, determine permissible burn days, and create long term PM-2.5 trends to assist with District planning and rulemaking activities.
- 3. Web Site Accessibility Updates. Making a website ADA accessible is an ethical and legal duty that provides several benefits, including reaching a wider audience by allowing people with disabilities to use the site effectively, improving the website's SEO ranking, enhancing user experience for everyone, reducing the risk of legal issues, and positively impacting District image by demonstrating a commitment to inclusivity. The District web site contained approximately 730 legacy PDFs and media files that did not meet current accessibility requirements. To remediate this, the District contracted the "accessiBe" company remediation service to remediate all PDF documents and media and to provide UA and WCAG certificates of compliance. "UA" meets the standards Universal Accessibility and "WCAG" meets the standards of Web Content Accessibility Guidelines. In addition, the District contracted for one year of file remediation service for all future documents that will be created and/or placed on the web site during the upcoming year.
- 4. <u>Community Mini Grant.</u> Pursuant to multiple public comments at District meetings and Board direction, the District created a community "mini-grant" program. The program focuses on the core tenet of AB617 that is direct community engagement and leadership in identifying and reducing air pollution at a local level. To implement this Program, the District created a funding application and agreement and translated the documents into

Spanish. The District added a new section to its web site for the Program and implemented an announcement campaign via the District's email list server, web site, social media, and public open house event. The mini grant program opened October 28, 2024. Grant amounts are up to \$2,000 each, and \$10,000 has been earmarked for this inaugural launch of the Program. The community mini grant program is on the District web site at: https://nosocoair.org/incentives/.

5. <u>Community Engagement</u>. District outreach for these community programs is supported through the District web site, mailing lists, social media accounts, and media releases. Guided by a core tenet of the AB 617 CAP Program, the NSCAPCD created a public event outside of its regularly scheduled meetings to provide public information about District programs and to highlight what the District does; provide (bilingual) information about AQI; include a display of a monitor and sensor; and to promote the District's community incentive programs including FARMER/Moyer, community sensor program, and community mini-grant program. The "open house" event was held November 13, 2024, and four District employees and various Board members attended the event including a multi-lingual District employee.

Public participation has also occurred at General Board meetings with specific requests for District support and funding of local air pollution reduction initiatives. Program input has been provided on an ongoing basis by the Sonoma County Department of Emergency Management, Sonoma County Health Department, Communities Organized to Prepare for Emergencies (COPE), the District web site, and other community feedback. The District has a permanent section on its web site for CAP at: https://nosocoair.org/about/activities/.

6. Community Mini Grant Projects Underway. Three community grants (item #4, above) contracts have been executed with awards of \$2,000 each since the last annual report. These include two projects by Sonoma County Regional Parks to switch from gas powered commercial landscape equipment to electric equipment for use at county park lands and one project by Climate Action Healdsburg to produce signage and education materials for an anti-idling campaign. These projects are underway, and their final information will be provided after their close-out in an upcoming report.

Some initial photo documentation for these projects is provided, below.



7. Emissions Data Collection. A pillar of the AB 617 Program is the collection of, and community access to, emissions data from permitted facilities. Pursuant to CARB's Criteria and Toxics Reporting Rule (CTR), permitted facilities must submit annual emissions reports to CARB through their local air district to CARB's "EMPI" system, a publicly accessible emissions data repository and query tool. Somewhat unique to NSCAPCD, it is in attainment for all state and federal ambient air quality standards and its minor sources have not previously had systematic annual reporting requirements. Furthermore, CTR requires specific facility and equipment information not typically contained in a permit. This required a comprehensive outreach campaign to help educate and assist approximately 166 applicable first-time small business reporters.

CTR "phases" in minor sources with the first phase reporting due August 1, 2025. To help CARB and industry to be successful, the NSCAPCD crafted and mailed an initial introduction to CTR letter with a custom-made reporting form and a second reminder, or final notice, letter. For the initial letter campaign, 166 businesses were included (\$656.21) and for the follow-up/final letter campaign 57 businesses were included (\$288.14). In conjunction with this outreach effort, NSCAPCD also conducted extensive phone call outreach for follow-up and technical support to finalize the reporting data for the Phase-1 reports. NSCAPCD was able to collect the information and submit the data set to CARB by the August 1, 2025, Phase-1 CTR deadline.

8. Emissions Data Reporting. The CTR rule contemplates that CARB will have a reporting system for industry to report into and the Districts will QA/QC the industry-submitted data in this system. This system was also to be available to the public to provide online data access and query tools. Emissions data is submitted based on eligibility criteria for four phases spanning a four-year period (2025-2029) and thereafter every facility reports every year. Unfortunately, CARB's system (EMPI) is not yet available which put an unanticipated burden onto NSCAPCD to collect the industry data and format it into CTR's

specific CEIDARS format. To facilitate this data collection in a relatively short time frame, the District chose to develop a series of database modules to compliment its existing stationary source database. The District's stationary source database tracks general facility and permit information and permit fee invoicing; it does not contain emissions information among several other CTR-required data fields. The newly developed modules (\$2,098.60) required over 25 hours of professional development and were integral to NSCAPCD being able to format and report the requisite Phase-1 data on schedule. This type of database development will continue to support implementation of the remaining reporting phases and represents a long-term asset for managing and reporting emissions data for the District.

V. Grant Funds Remaining and Expended

As noted in the table above in Section II, the total grant funding amount for Year 7 is \$31,915 and at the end of this reporting period, the District has expended \$30,372.45 of the total Year 7 grant funds: \$4,000 for media outreach project; \$8,212.50 for community sensor project; \$9,117 for web site ADA remediation; \$6,000 for mini grant program; \$944.35 for emissions data collection campaign; and \$2,098.60 for emissions data reporting. The remaining balance of funds \$1,542.55 are anticipated to be expended by 6/30/2026, well before the June 30, 2028, liquidation deadline. The \$1,542.55 balance will likely be spent on additional mini grant projects or emissions reporting database development, TBD.

Of note, no jobs were created with these CAPP funds (and NSCAPCD population is less than 50,000 people).

VI. Summary of Reimbursement(s) Requested

No remaining project reimbursements.

VII. Itemized Invoice Information

See Attachments below for documentation of paid products and services described in this report through the end of this reporting period. Remaining invoice information will be provided in the final report.

- A) Media service
- B) Community air sensor program
- C) Remediation of all District web site PDFs and media to accessibility standards
- D) Emissions data collection mail campaign
- E) Emissions data reporting database modules



Invoice

	Date	08/29/2024
	Invoice #	IN-S151-573114
Bill To Northern Sonoma County Air Pollution Control District Robert Bamford 625 Center Street Healdsburg CA 95448	Rep	Alex Philip
	Due Date	09/12/2024
	PO #	
I		

		Memo		
08/27/2025	Robert Bamford			
Description	•	•		Tax Rate
Media Intelligend	ce Essentials L1			
			Total Amount Due	4,000.00 USD 4,000.00
	Description Media Intelligent	Description Media Intelligence Essentials L1	Description Media Intelligence Essentials L1	Description Media Intelligence Essentials L1 Total Amount Due

PAYMENTS VIA STANDARD MAIL Payable to: Meltwater News US Inc Dept LA 23721 Pasadena, CA 91185-3721

For Courier Deposits (Fed EX, UPS, etc.): *Deposits received by courier may not post same day Remit to:
Meltwater News US Inc: PO BOX Number: 23721, 14005 Live Oak Ave Irwindale, CA 91706-1300

FOR ELECTRONIC (WIRE) PAYMENTS: HSBC

HSBC 601 Montgomery St, #108, San Francisco, CA, 94105 Account No.: 267083700 ABA (for wire transfer): 021001088 Routing (for ACH): 122240861 SWIFT Code (for international payments): MRMDUS33 Benefit of Meltwater News US Inc.

Please reference "Meltwater" and invoice number on all documents For billing inquiries please contact our Accounts Receivable department: Tel +1-980-225-7930 invoice.na@meltwaternews.com

As per Meltwater Standard Terms and Conditions use of any Purchase Order Number on this invoice is for payment purposes only.

Attachment B: Clarity Sensors

Clarity Movement Co. PO Box 2051 La Mesa, CA 91943 https://www.clarity.io/



ADDRESS

North Sonoma County Air Pollution Control District 625 Center St, Healdsburg, CA 95448 SHIP TO

North Sonoma County Air Pollution Control District 625 Center St, Healdsburg, CA 95448 QUOTE # 2870 DATE 11/05/2024

ACTIVITY	QTY	RATE	AMOUNT
Clarity Data License Renewal PM2.5, NO2 Data License Renewal 1-Year Term: 04-Dec-2024 to 03-Dec-2025	3	1,400.00	4,200.00T
Related Devices: AXXRRCYF, APGFL6TY, AXXMG9XW			
Wind Integration 1-Year Wind Data Subscription License: 04-Dec-2024 to 03-Dec-2025	3	1,100.00	3,300.00T
B 1 - 1 B 1			
Related Devices: MYFC3KKK, MY99F3FW, MYJ3YY3G			
	SUBTOTAL TAX		7,500.00 712.50
MYFC3KKK, MY99F3FW, MYJ3YY3G - Written acceptance or submitted purchase order of this quote	TAX TOTAL	USI	,

Accepted By Accepted Date

- All inquiries including POs, please email orders@clarity.io.

Attachment C: Web Site Accessibility Remediation with Certification (1 of 2)

Docusign Envelope ID: 22748523-451A-454E-AED0-561F5013344E

√ accessiBe	:					
			Quote for NOSOC	OAIR		
issued on: Thîs quote is valid unt	il:	Aug 23, 2024 Aug 30, 2024		Payment Period: Other		
Product/Service	Service		Quantity	Additional information	Prioing	
accessService	File Remediat		735.00		\$7,717.50	
- dedeason vice	Media Remed	fiation	1.00	7 minutes	\$350.00	
				Total for accessServices: Subtotal:		
				Subtotal	8007.0	
				Discount Rate:		
				Grand Total After Discount ("Fees"):	8067.5	
affect your existing Sub	oscription Pian upon its rer	ewal.		late the Subscription Fees, at any time, and	i will notify you if such an update may	
Subscription period	other			One-time non-subscription		
Payment method Billing Contact Name	Credit Card		If Other, please describe:			
Billing Contact email	-			=		
Billing Address				-		
•	is, please contact us vi site – https://accessibe.co ssibe.cem					
	acci Je	ocuSigned by: ssiBe Signature SSICA ROBUNTSO 6169DF46B734DD	N	Customer Signature ROPUT Bamfor 580742FF9BB0454	d	
Best regards, Shoya Clough, Accoun	t Executiv e					
Annex B - accessServ	ices description					

The Services are accessibility remediation services and do not include an uplead of the remediated files/media to Customer's website.

Customer must send accessible the relevant final files that it wishes to be made accessible, accessible will not remediate files that are not sent to accessible and which are not specified in this proposal.

The files will be made accessible on an as is basis, accessible does not modify or alter the text, branding, graphic design, etc. of the files. If the custemer wishes to modify or alter those. Customer must provide accessible with alternative text for visual files (i.e. pictures graphs, etc.) prior to accessible commencing the Services on such files. If Customer chooses nat to provide an alternative text, accessible characteristic text to the best of its ability/understanding, however accessible cannot and does not guarantee that such alternative text will fit Customer's needs or requirements.

Scanned Files: Customer acknowledges and agrees that according to the WCAC 2.0 scanned text messages may not be adeled to accessible files. If scanned files or scanned text images are previded to accessible by Customer, then accessible will remediate them using full alternative text.

Attachment C: Web Site Accessibility Remediation with Certification (2 of 2)

Docusign Envelope ID: 98F44480-3335-4CA5-A7F6-D66EE7FD08A1

√ accessiBe	•					
		Quo	te for NOSOC	OAIR		
issued on: This quote is valid unt	íl:	Aug 23, 2024 Aug 30, 2024		Payment Period: Annually		
Product/Service	Service	Quan	tity	Additional information	Pricing	
accessService	s 🔽 File Reme	diation	100.00		\$1,050.0	
				Total for accessServices		
				Subtotal	\$1,05	
				Discount Rate:		
				Grand Total After Discount ("Fees"):	\$1,05	
	oscription Plan upon its			date the Subscription Fees, at any time, an		
Payment Terms:						
Subscription period	Annually		er, please describe:			
Payment method	Credit Card	If Oth	er, please describe:			
Billing Contact Name Billing Contact email				-		
Billing Address				-		
				-		
For further question Online chat at our web Email – support@acce	site - <u>https://accessibe</u>					
		DocuSigned by: accessibe Signature JUSSICA ROBUTSON		Signed by: Customer Signature ROBLY Bamfor	·d	
Best regards,					_	
Shoya Clough, Accoun	t Executive					

Files and Media Accessibility Service

The Services are accessibility remediation services and do not include an upload of the remediated files/media to Customer's website.

Customer must send accessible the relevant final files that it wishes to be made accessible, accessible will not remediate files that are not sent to accessible and which are not specified in this proposal.

The files will be made accessible on an as is basis, accessible does not modify or alter the text, branding, graphic design, etc. of the files. If the customer wishes to modify or alter those, Customer must provide accessible with alternative text for visual files (i.e., pictures, graphs, etc.) prior to accessible commencing the Services on such files. If Customer chooses not to provide an alternative text, accessible shall provide the alternative text to the best of its ability/understanding, however accessible cannot and does not guarantee that such alternative text will fit Customer's needs or requirements.

Scanned Files: Customer acknowledges and agrees that according to the WCAG 2.0 scanned text messages may not be added to accessible files. If scanned files or scanned text images are provided to accessible by Customer, then accessible will remediate them using full alternative text.

Attachment D: Emissions Data Collection Campaign (1 of 2)



455 Tesconi Cir Santa Rosa, CA 95401 (707) 578-8700

Invoice

Dale	Invoice #
5/19/2025	12306

RECEIVED
MAY 2 1 2025

MADTERDAL O	ONOMA CO	INTY AIR POLLUTIO	'ANI
625 CENTER S		JAN I AIR I OLLO IR	214
HEALDSBUR			

P.O. Number	Terms	Rep	Job Number		Job Description	
ROBERT BAMF	Net 10	AR	51121		PHASE I LETTER	
Quantity	Item Code	Ţ , , , , , , , , , , , , , , , , , , ,	Description		Price Each	Amount
166 P		POSTAGE - FI	RST CLASS		0.69	114.54
	ASTSET	SET-UP DATA			25.00	25,00
	OLD2	FOLD 2 PAGE			0.048	7.97
	NKSET	INKJET SET-U			20.00	40.00
	NK		ORK ON #10 ENVELOPES I		63.00	63.00
	NK.		ORK ON #9 ENVELOPES IN	1 I/0 BLACK	44.00	44.00
166 H		INKJET ADDR			0.045	7.47
166 H		INSERT (3) BY			0.18	29.88
	REPMM	MAIL MERGE			0.085	14.11
166 N 166 P		METER/SEAL SORT & BAG I			0.04 0.03012	6.64
	DEL			HOR DON		5.00
1 1 4	EL	ENTRY	DRIADELIVER TO POST OFF	ICE FOR	20.00	20.00
2 .	ROOF	SET-UP/PROV	HDE BROOFS		40.00	80.00
	KOOF MGITAL		# TEXT 8,5X11 PERSONALE	ZEDIETTED	0.495	82,17
	OIGITAL				0.495	82.17
100	HOLIAL	9.75% Healdsh	# TEXT 8.5X11 PERSONALE	ZBD FORMS	9.75%	34.26
Fhank you for your	business! Note:All in	nvoices over 30 d	lays will accrue 1.5% charge pe	er month.	Total Payments/Credits	\$656.21
	-					\$0.00
					Balance Due	\$656.21

Attachment D: Emissions Data Collection Campaign (2 of 2)



Bill To

455 Tesconi Cir Santa Rosa, CA 95401 (707) 578-8700

Invoice

Date	Invoice #
7/10/2025	13286

Job Description

PHASE 2 LETTER

Balance Due

\$288.14

625 CE	IERN SONOMA CO NTER ST OSBURG, CA 95448	UNTY AIR POLL	UTION	
P.O. Number	Terms	Rep	Job Number	
ROBERT BAME	Net 10	AR	52012	
Quantity	Item Code		Description	
1	POST1 LISTSET FOLD2 INKSET INK	POSTAGE FIRST CLASS SET-UP DATABASE FOLD 2 PAGES INKJET SET-UP INKJET ARTWORK ON #10 ENVELOPES IN 1/0 BLACK		

Quantity	Item Code	Description	Price Each	Amount
57	POST1	POSTAGE - FIRST CLASS	0.69	39.33
1	LISTSET	SET-UP DATABASE	25.00	25.00
57	FOLD2	FOLD 2 PAGES	0.08772	5,00
2		INKJET SET-UP	20.00	40.00
1	INK	INKJET ARTWORK ON #10 ENVELOPES IN 1/0 BLACK	37.00	37.00T
1		INKJET ARTWORK ON #9 ENVELOPES IN 1/0 BLACK	26.00	26.00T
	INK1	INKJET ADDRESS (1-999)	0.08772	5.00
	INS2H	INSERT (2) BY HAND	0.16	9.12
1	PREPMM	MAIL MERGE MATCHING	0.08772	5.00
	MS	METER/SEAL MAILPIECE	0.08772	5.00
57	BAGL	SORT & BAG LOCAL MAIL	0.08722	4.97
I	DEL	POSTAL REPORT/DELIVER TO POST OFFICE FOR	20.00	20.00
		ENTRY		
1		SET-UP/PROVIDE PROOFS	25.00	25.00T
57	DIGITAL	4/4 COLOR 60# TEXT 8.5X11 PERSONALIZED LETTER	0.525	29.93T
		10.0% Santa Rosa	10.00%	11.79
Thank you for yo	ur business! Note:All in	Total	\$288.14	
			Payments/Cre	dite
			- aymentore	\$0.00

Attachment E: Emissions Data Reporting Database (1 of 2)

Invoice 2628 for 7/1/2025 – 7/15/2025

July 18, 2025

Terms: due and payable



Northern Sonoma County APCD 625 Center Street Healdsburg CA 95448

Hours

<u>Date</u>	Worked/B	illed	<u>Description</u>
7/1/2025	1.3	1.3	CTR File Upload database with Craig Tallman:
			Phone meeting with Craig
			discuss production version location and related files;
			pollutants logic
7/3/2025	5 4.8	4.8	Session with Craig:
			Prep for production release network location, incl. identifying
			primary data source files and supporting files
			program file format with stacked categories, incl. shifting column
			titles per category, and ceidars header row
			Analysis of pollutant calculations
7/3/2025	5 1.0	0.0	Travel
7/4/2025	0.3	0.3	Test remote login permissions for new CTR directories;
			email results to Craig
7/8/2025	1.5	1.5	Programming column headers for each section
			Analysis for emissions calculations
			Phone meeting with Craig:
			Project review and discuss remote permissions
			for new CTR directory
7/9/2025	5 1.4	1.4	Populate fields with CTR data
			Analysis of emissions calculation logic and lookup syntax

Attachment E: Emissions Data Reporting Database (2 of 2)

7/10/2025	4.8	4.8	Session with Craig:
• •			analysis of emissions calculation
			Program two new tables with raw factors (once for CO;
			second for NO x, ROG, PM);
			program function to look up raw factors;
			program function to calculate final factor
7/10/2025	1.0	0.0	Travel
7/11/2025	1.6	1.6	email response to help desk for macro error condition
			Testing various suggestions and submitting results
7/13/2025	0.7	0.7	Macro error condition: importing into other database version
			and testing
7/14/2025	3.5	3.5	Macro error condition: research and review for support ticket
			Programming: expanding one EMS record per pollutant
			Phone meeting with Craig: discuss data logic
7/15/2025	5.0	5.0	Session with Craig:
			Meeting with Mark Madden: macro error condition
			Programming: populating remainder of Emissions Factor table;
			test functions to calculate raw factors and final factors;
			populating calculated fields for expanded EMS records
7/15/2025	1.0	0.0	Travel
**************************************	27.9	24.9	billed hours
@ <u>\$95.00</u> \$2,365.50		\$95. 0 0	

NSCAPCD - CPF
DEPT: 86120660
FUND: 77306 - 52162
USER GODE: 622 - CAPP 22

MSCAPOD - GP=
DEPT: 66120600
FUND: 77306
ACCOUNT: \$2162
USER CODE: G23-CAPP22