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SANTA CRUZ COUNTY PREDICTIVE MODELING SUMMARY REPORT

Prepared by Focus Strategies

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I. INTRODUCTION TO MODELING

A. Background

To assist community leaders and key stakeholders in developing the Three-Year Strategic Action Plan to Reduce Homelessness, Focus Strategies conducted a quantitative analysis of the performance of the homelessness response system using our System-Wide Analytics and Projection (SWAP) tools. SWAP is a joint project of Focus Strategies and the National Alliance to End Homelessness (NAEH). The tools are designed to help communities use their local data to understand what their current system is accomplishing and to plan and prioritize changes to bring about the greatest possible reduction in homelessness.

SWAP is comprised of two primary tools: (1) the Base Year Calculator (BYC) which helps users assess whether their Homeless Management Information System (HMIS) data is of sufficient quality and accuracy to support meaningful performance measurement and produces current system performance results, and (2) the System Performance Predictor (SPP) which allows communities to model the results of changes to individual projects or groups of projects, including such strategies as adding new programs to serve people experiencing homelessness, serving more literally homeless people in existing projects, and/or increasing the rate of exit to permanent housing from emergency and other temporary program types. The SPP uses the results generated by the BYC as input to model system changes. A previous report described the results of the BYC analysis of programs in Santa Cruz County; this report focuses on the results of modeling with the SPP.

B. Overview of Approach

Quantitative modeling with the SPP is an approach for ‘peeking’ into the future to estimate how the numbers of people experiencing homelessness in the community might grow or shrink as changes are made to the homelessness response system. The model does not generate a single correct “answer”. Rather, it predicts the likely implications of different choices and supports more intentional and deliberate strategic planning. Modeling informs the future; it does not tell the future.

The modeling approach is based on thinking about the homelessness response system as a set of policies, processes, and programs that impact how people move from a condition of having a place to live (being housed) to not having a place to live (experiencing homelessness) and back to being housed. People are assumed to have ended their experience of homelessness only once they are housed. People may enter temporary



programs (such as emergency shelter), but the model does not count them as no longer homeless until they are permanently housed.

To predict changes in the size of the population of people experiencing homelessness, the model takes into considerations the following variables and the inter-relationships among them:

- Best understandings of the current size of the population experiencing homelessness
- Assumptions about the rate at which people become newly homeless (i.e. they move from having housing to not having housing) and impacts of strategies to prevent people from entering homelessness
- The currently available inventory of beds in the system - emergency shelter, transitional housing, rapid rehousing, and permanent supportive housing programs, and assumptions about how that inventory will change over time
- The effectiveness of existing and projected programs in helping people move from homelessness to housing, as measured by whether the programs are serving people who are already homeless (versus people who are still housed), how long people stay in these programs, and whether they secure housing upon exit

Taken together, these factors paint a picture of system “flow” and the resulting impact on the numbers of people experiencing homelessness.

One factor not explicitly addressed in the model is the availability of affordable housing. The model assumes that for people to end their homelessness, they must “exit” the system to permanent housing. While some people may exit by securing an existing housing unit (either a subsidized unit or market rate unit with or without rental assistance), an increase in the overall supply of affordable housing will also be needed. Focus Strategies has conducted a separate Housing Market Analysis that explores the gap between the existing affordable housing supply and what is needed.

II. DATA USED FOR MODELING

The modeling approach uses the SPP, a Microsoft Excel based tool that applies past system performance data generated by the BYC.¹ The SPP estimates the impact of system changes

¹ The source of this information is the Homeless Management Information System (HMIS) which provides information about programs that serve people who are experiencing homelessness and the people who use the programs.



on the populations of people experiencing unsheltered and sheltered homelessness over three years. The HMIS data used in the BYC was from Fiscal Year 2018-2019 for projects that had at least one year of HMIS data and were included in the 2019 Housing Inventory Count (HIC).²

HIC Inventory Updates

The report generated from the Base Year Calculator (BYC) used information about the system that corresponded to projects that had at least one full year of data in HMIS. To ensure the data used for modeling were as reflective as possible of the current system, a number of projects were added to the baseline BYC data.³ First, projects were added that existed in 2019 but were not included in the BYC because they did not enter data into HMIS or because they did not have a full year of data. The following projects were added for this reason:

- Crisis and Transitional Housing Projects:
 - Safe Spaces ES capacity - 40 family units (parking)
 - Jesus Mary and Joseph ES capacity - 4 family units
 - Monarch ES capacity - 6 beds and 6 units for families experiencing DV
 - Siena House ES capacity - 4 beds and 3 units for pregnant mothers
 - Encompass Community Services FUP vouchers - 23 adult beds
 - Encompass Community Services THP Plus - 15 adult beds
 - New Life Community Services Gemma Residential TH - 6 adult beds
- Permanent Housing Projects:
 - Families in Transition Young Adults Achieving Success, YHDP RRR 2.0- 3 youth beds
 - County of Santa Cruz Mental Health PH for Mental Disabilities - 5 adult beds

Second, the following projects were added for modeling because they were new system projects in 2020 and were reported on the 2020 HIC:

- Permanent Housing Projects:
 - Housing Matters YHDP Youth Rapid Rehousing - 1 unit for families (youth)

² "The Housing Inventory Count (HIC) is a point-in-time inventory of provider programs within a Continuum of Care that provide beds and units dedicated to serve people experiencing homelessness (and, for permanent housing projects, where homeless at entry per the HUD homeless definition), categorized by five Program Types: Emergency Shelter; Transitional Housing; Rapid Rehousing; Safe Haven; and Permanent Supportive Housing." <https://www.hudexchange.info/programs/hdx/pit-hic/>. Communities receiving certain Federal funding are required to prepare a HIC annually for submission to the US Department of Housing and Urban Development.

³ Added projects assumed the average baseline performance of other like project types. For example, a newly added rapid rehousing project would assume the system average of other rapid rehousing projects for length of stay, exits to permanent housing, etc.



- County of Santa Cruz Human Services Housing and disability advocacy program RRH - 48 adult beds
- Housing Matters ESG Rapid Rehousing - 3 adult beds
- Encompass Community Services Grace Commons PSH - 14 adult beds
- Pajaro Valley Shelter Services PSH - 6 family units

COVID-19 Crisis Response Inventory

A Shelter-in-Place order was issued by the Santa Cruz Health Officer on March 31, 2020 for all Santa Cruz County residents. In April, all 16 existing emergency shelters implemented a shelter-in-place model which required implementing social distancing by having at least three feet of space around each person’s sleeping area. To achieve this, most existing shelters decreased their census and the COVID-19 Shelter and Care DOC (managed by Santa Cruz County in partnership with the cities of Santa Cruz and Watsonville) put additional, expanded, shelter capacity in place to provide bed space to people that were staying at existing shelters. The DOC also put a number of non-congregate Isolation/Quarantine/Vulnerable (I/Q/V) hotel programs in place. Existing shelter residents who met the criteria for this I/Q/V resource were admitted. Overall, the emergency shelter inventory increased by approximately 15 units for families and 274 beds for single adults in response to the pandemic.

Inventory Used for Modeling

The table below reflects the inventory included in the 2020 HIC as well as the additional COVID-19 shelter inventory. A determination has not yet been made regarding whether the County and its partners will be able to convert the added pandemic-related temporary shelter inventory to permanent shelter beds or replace them with new permanent shelter beds (such as through the creation of one or more navigation centers), or whether the shelter inventory will scale back to pre-pandemic levels. Additional funding will be needed to maintain the expanded capacity. Therefore, the modeling scenarios presented include options that: maintain COVID shelter inventory; maintain half the COVID shelter inventory and maintain none of the COVID shelter inventory.



Inventory (Used as Baseline for Modeling)		
Project Type	Units for Families	Adult Only Beds
Emergency Shelter	72	557
2020 HIC Emergency Shelter	57	283
COVID-19 Additional Emergency Shelter	15	274
Transitional Housing	30	84
Rapid Rehousing	118	86
Permanent Supportive Housing	43	537

III. BASELINE ASSUMPTIONS

In addition to incorporating past system performance, the SPP requires that three parameters be specified before modeling begins: (1) the number of households experiencing unsheltered homeless at the start of the modeling period; (2) the number of households newly experiencing unsheltered homelessness in the community each year; and (3) the percent of unsheltered households that do not enter the homeless system. Below we describe the values we used for each of these:

- Households experiencing unsheltered homelessness: the model incorporates the number of unsheltered households found in the 2019 Point in Time Count; 1,098⁴ households.⁵
- Number of households newly experiencing unsheltered homelessness in the community each year: the model uses 800 households for an estimate of this number. We derived this using 2019 HUD System Performance Measures which showed 964 or 57% of people entering HMIS over the course of the year were newly homeless;⁶ approximately 800 households.
- Percent of unsheltered households that do not enter the homeless system: This measure estimates the percent of all unsheltered households (those who are newly homeless, those who have returned to homelessness, and those who have exited other homeless programs to homelessness) who do not enter the homeless system (meaning, they do not enroll in any of the program types being modeled). Of the three baseline assumptions, this has the least evidence-based rationale. Thus, we used two different starting places to determine impact on the number of households

⁴ The number of households experiencing unsheltered homelessness was reported in the Point-in-Time Count as 1,115. The modeling does not take into account those households comprised only of children (i.e. unaccompanied minors), leaving used 1,098 households for modeling.

⁵ The almost 1,100 households are comprised of just under 1,700 people.

⁶ Newly homeless is defined as not having been active anywhere in HMIS for at least the previous two years.



experiencing unsheltered homelessness over time to determine the most logical assumption with which to proceed:

- 45% (15% of literally homeless households self-resolve without the use of homeless system resources; 15% of literally homeless households will be successfully diverted; and 15% of literally homeless households move from Santa Cruz to another community); and
- 24% (8% of literally homeless households self-resolve without the use of homeless system resources; 8% of literally homeless households will be successfully diverted; and 8% of literally homeless households move from Santa Cruz to another community).

Test of Baseline Assumptions

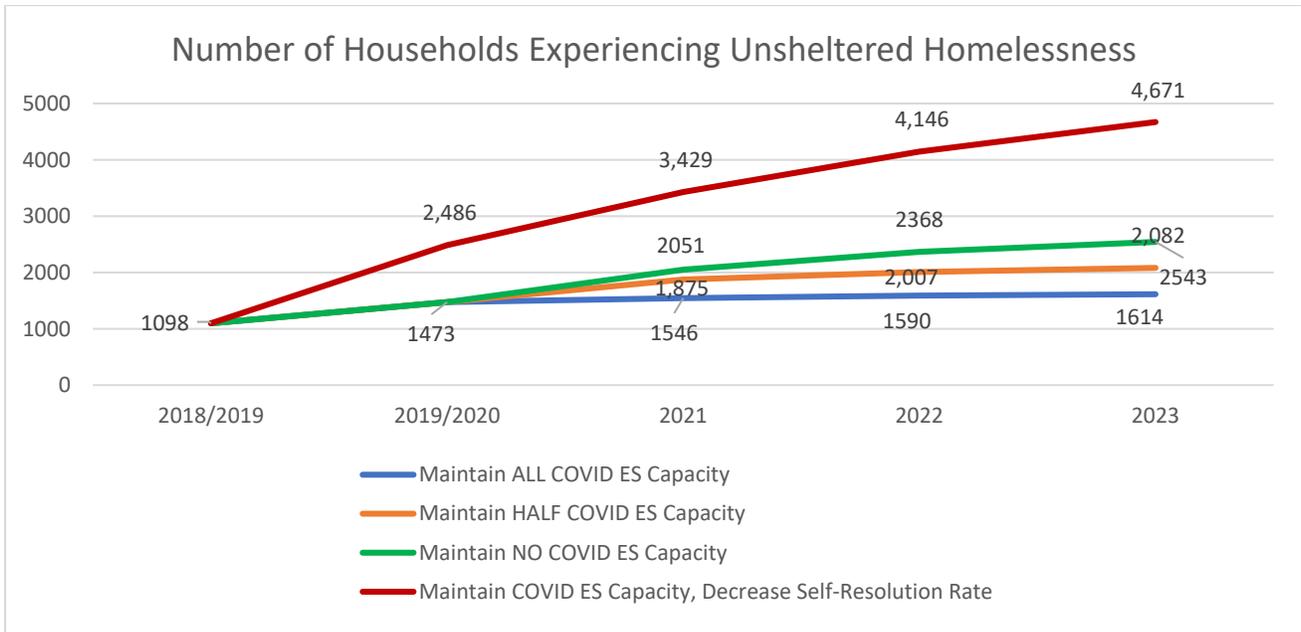
In order to determine whether the assumptions described above would result in output that made intuitive and common sense in light of other things known about Santa Cruz County, we modeled the impact to the estimated growth rate of the unsheltered population under four scenarios:

- 45% of literally homeless households resolve their crisis without homeless system intervention AND **ALL** COVID shelter capacity is maintained/converted;
- 45% of literally homeless households resolve their crisis without homeless system intervention AND **HALF** COVID shelter capacity is maintained/converted in 2021;
- 45% of literally homeless households resolve their crisis without homeless system intervention AND **NO** COVID shelter capacity is maintained/converted (eliminated in 2021); and
- 24% of literally homeless households resolve their crisis without homeless system intervention AND **ALL** COVID shelter capacity is maintained/converted.

The next graph presents the findings of the four modeled scenarios. Data in the graph indicate the estimated number of unsheltered homeless households in each year through 2023 under each scenario. For example, the line labeled “Maintain COVID ES Capacity” (blue line) shows that if the COVID ES capacity is maintained, 45% of households experiencing homelessness resolve their crisis without intervention, and there are no other changes to the system, the number of unsheltered households will remain relatively consistent over time. In contrast, if the rate of crisis self-resolution is cut in half (24%; red line), the number of households experiencing unsheltered homelessness will increase by more than 400% over the next three years. In the scenario where the COVID ES capacity is lost in 2021 (green line),



the number of unsheltered households increases in 2021 (due to those that must leave the COVID shelter space) and then increases at an attenuated rate.



Of these scenarios, the more than 400% increase associated with the lower rate of households resolving homelessness without intervention seems most unlikely. The unsheltered PIT count in Santa Cruz County has historically remained relatively stable and has not seen major increases in the recent past. If anything, the number of unsheltered households declined in the most recent PIT, from approximately 1,400 in 2017 to 1,100 in 2019. Although 2020 has brought unprecedented health and economic challenges, large scale State and federal interventions have helped to cushion some of these impacts. A statewide eviction moratorium is in place and significant federal and state financial resources have been made available for rental assistance. The impact of these factors on the number of households experiencing homelessness is complex and uncertain. We therefore concluded that the results associated with the 45% rate of households experiencing homelessness resolving their crisis without intervention estimates the most likely scenario to use in the modeling.

IV. HOMELESS SYSTEM MODELS: ESTIMATES THROUGH 2023

Using three scenarios (maintaining all, half or none of COVID-19 ES capacity), our modeling explored the impacts of two additional factors: (1) integration of performance targets for



homeless system programs, and (2) addition of rapid rehousing and permanent supportive housing inventory to the system.

Performance Targets

As noted, Focus Strategies produced a quantitative performance analysis of the homeless system in Santa Cruz County that was used as the starting point for modeling. The initial analysis identified a number of areas of weak project performance that could be targeted for improvement. Improving project performance has been included as one of the goals for the Three-Year Strategic Action Plan. Setting shared targets for performance allows greater understanding among all system stakeholders about what is working, what is not, and how to improve individual programs and the system as a whole. Targets provide motivation for action.

The baseline performance data suggested three areas where improved performance would be useful: (1) lowering the rate of households who enter homeless programs who were in some type of housing immediately beforehand, (2) shortening length of stay in programs, and (3) improving exits to permanent housing. Our modeling recommends targets for these three measures and predicts the impact of achieving the targets.

Performance targets were generated by reviewing the current performance of the system and a combination of national standards (HUD, NAEH) and Focus Strategies experience with high performing communities. The next table presents for each project type and each performance measure: (1) our recommendation for an ideal target; (2) our recommendation for the minimum target for efficient performance; (3) the level of performance found in our BYC analysis of data from programs in Santa Cruz County; and (4) the targets used in each year of the modeling. All the targets project an increased level of performance gradually over the course of three years. The exception is length of stay in shelter, which remains at the same level over the three years.

	Emergency Shelter	Transitional Housing	Rapid Rehousing	Permanent Supportive Housing
Length of Stay				
FS Recommended Target	30 days	90 days	120 days	NA
FS Recommended Minimum	90 days	150 days	180 days	



	Emergency Shelter	Transitional Housing	Rapid Rehousing	Permanent Supportive Housing
Current Performance (BYC)	76 days	413 days	281 days	
Targets used in Modeling	60, 60, 60 days	365, 300, 250 days	240, 210, 180 days	
Exit Rate to PH				
FS Recommended Target	50% - 80%	85% - 90%	85% - 90%	NA
FS Recommended Minimum	40% - 65%	80%	Between 80% and 95%	
Current Performance (BYC)	21%	66%	62%	
Targets used in Modeling	21%, 30%, 40%	66%, 70%, 80%	62%, 70%, 85%	
Entries From Homelessness				
FS Recommended Target	85% unsheltered/ES	95% unsheltered/ES	95% unsheltered/ES	95% unsheltered/ES
FS Recommended Minimum	75% unsheltered/ES	75% unsheltered/ES	75% unsheltered/ES	75% unsheltered/ES
Current Performance (BYC)	44%	78%	50%	81%
Targets used in Modeling	50%, 65%, 75%	80%, 85%, 90%	60%, 75%, 85%	85%, 90%, 95%

Adding Permanent Housing Inventory

In both 2021 and 2022, the models assume there will be added rapid rehousing and permanent supportive housing inventory. The majority of these slots are for single adults who comprise the large majority of the unsheltered homeless population:

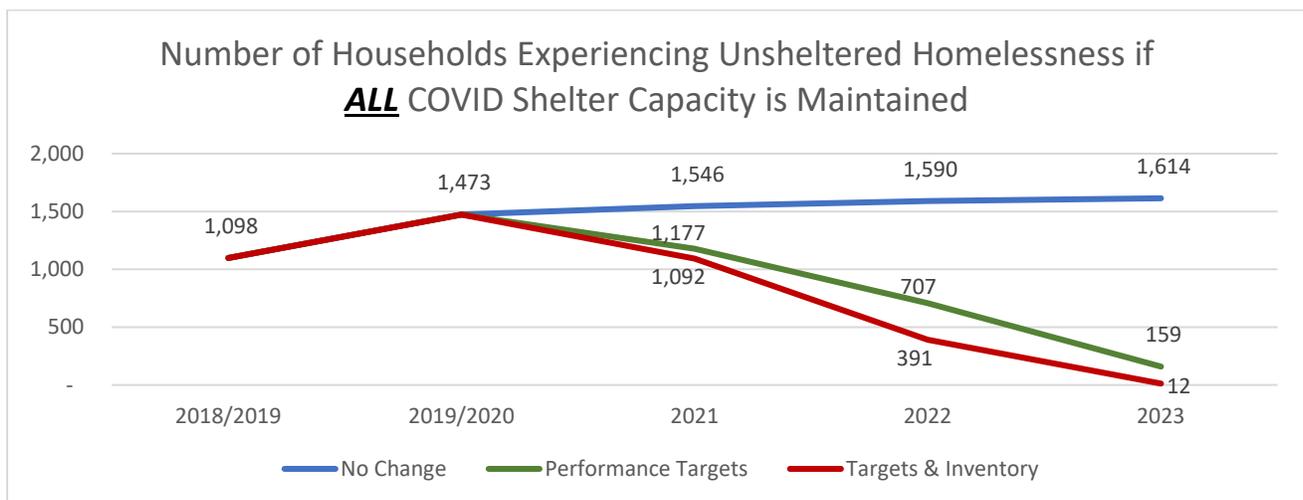
- 2021
 - Increased RRH slots by 150 for adult households, resulting in a total of 236
 - Increased RRH slots by 50 for family households, resulting in a total of 168
- 2022
 - Increased RRH slots by 150 for adult households, resulting in a total of 386
 - Increased PSH slots by 100 for adult households, resulting in a total of 637

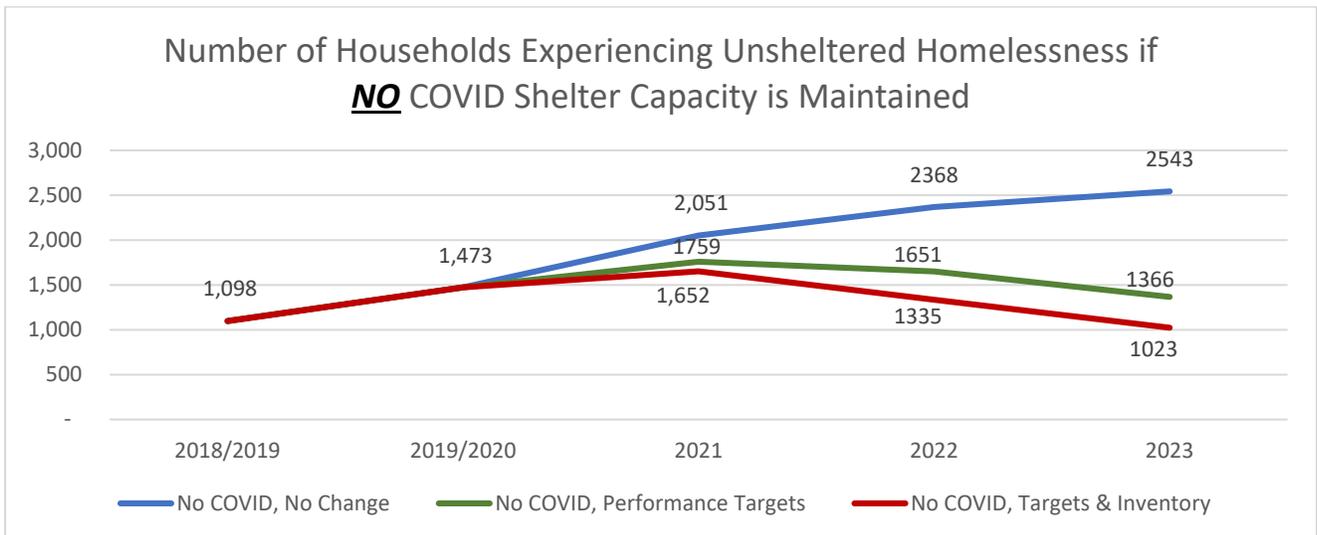
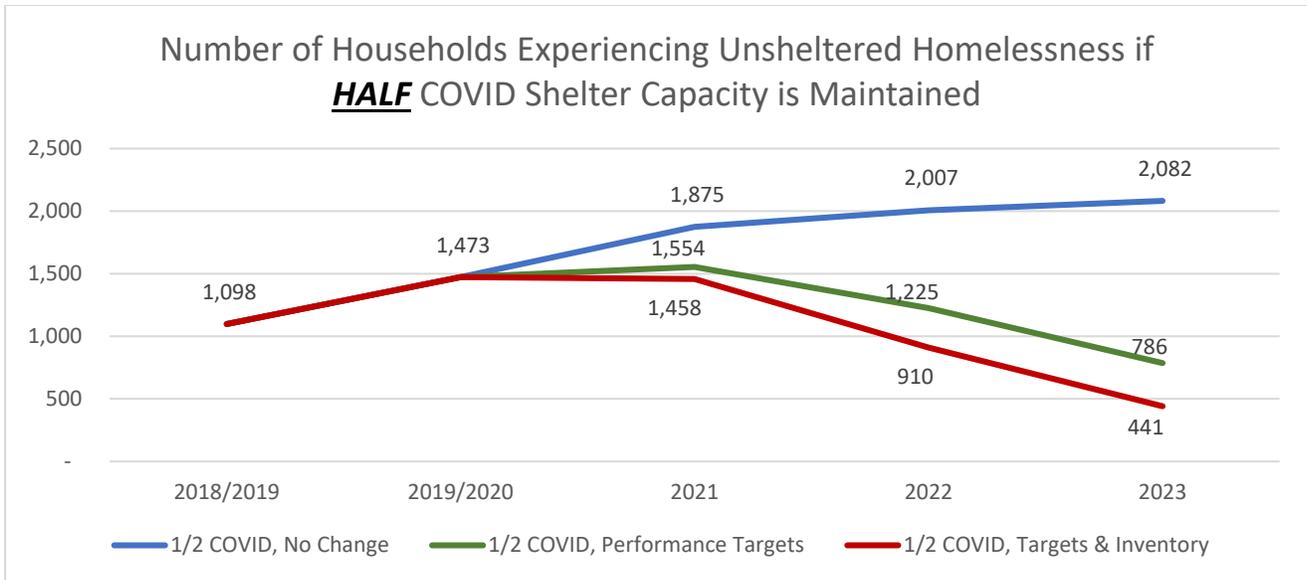


COVID ES Capacity: Impact on Number of Households Experiencing Unsheltered Homelessness

The next graphs illustrate the results of three models for each of three scenarios for COVID ES capacity: maintaining all, half, or none of it. The three models include: no changes to the system (No Change), implementing and achieving performance targets (Performance Targets), and both implementing/achieving performance targets and adding additional permanent housing (rapid rehousing and permanent supportive housing) inventory (Targets & Inventory).

These models suggest that implementing and achieving performance targets, with or without additional permanent housing inventory, can have an impact on the number of households experiencing unsheltered homelessness; the difference between the scenarios is the degree of impact. All the models suggest that implementing and achieving performance targets attenuates the predicted increase in the number of households experiencing homelessness, and that adding permanent housing inventory contributes further to that effect.





The next table compares the relative impact of each scenario on the number of households experiencing unsheltered homelessness when compared to the number of unsheltered households reported in the 2019 Point-in-Time count. Assuming the recommended performance targets are achieved and the new permanent housing inventory added, the community could see a reduction in the unsheltered population anywhere between 99% and 7%, depending on how much of the existing COVID 19 shelter capacity is maintained. The middle scenario, in which half the inventory is maintained, would result in a 60% decrease. This is the scenario that has been integrated into the Three-Year Plan. For the purpose of the Plan, we have assumed a total reduction of unsheltered homelessness of 50%.



Households Experiencing Unsheltered Homelessness: Percent Change from 2018/2019 to 2023			
Scenarios	No System Change	Performance Targets Implemented	Targets Implemented & Inventory Added
All COVID ES capacity	+47%	-86%	-99%
Half COVID ES capacity	+90%	-28%	-60%
No COVID ES capacity	+132%	+24%	-7%

Total Number of Households Experiencing Homelessness

The modeling also considers the impact of reducing unsheltered homelessness by 50% on the total number of households experiencing homelessness. The next table provides the number of unsheltered and sheltered households counted in the 2019 Point-in-Time count as well as estimates of the numbers should Santa Cruz County successfully reduce unsheltered homeless by 50%, maintain/convert half of the COVID ES capacity, implement and achieve performance targets, and add permanent housing inventory. The data show that this scenario projects the overall number of households experiencing homelessness in Santa Cruz County will decrease by more than 25% by 2023.

Number of Households Experiencing Unsheltered Homelessness: Change from 2018/2019 to 2023			
Population	2019	2023	% Change
Unsheltered Households	1,098	549	-50%
Sheltered Households	307	485	+58%
Total Homeless Households	1,405	1,034	-26%

Households Exiting to Permanent Housing

The models presented include assumptions about increasing the rate at which households will exit the homeless system to permanent housing. As noted earlier, the assumption that permanent housing exits can increase must be supported by an increase in the availability of affordable permanent housing options. Although the models presented include additional rapid rehousing and permanent supportive housing options, affordable housing, in general, is in short supply in the community (see Housing Market Analysis Report).

The next table shows the expected number of permanent exits that are projected in the selected scenario: half of COVID shelter capacity is maintained and performance targets are



met. The values are derived directly from the expected number of exits given the model’s assumptions and multiplied by the average permanent housing exit rate for that project type in the year being modeled. The current number of households housed from rapid rehousing accounts for the number of exits currently absorbed by the system; the current permanent supportive housing turnover rate indicates the number of new households currently enrolled in permanent supportive housing each year.

As the data show, achieving the result of a 50% reduction in unsheltered homelessness over three years using the assumptions we have modeled means that the system must achieve a significant increase in the number of housing exits in each of the three years. Only some of these “exits” can be created by providing a range of services and supports to help households secure housing in the existing market; there are limits to what can be achieved without an increase in the housing inventory. For example, the permanent housing exit rate is currently 42% for rapid rehousing programs; the model suggests that rate will double to 85%. While a portion of that improvement can likely be achieved through improvements in how programs operate, before all programs can achieve that high rate it is likely that they will run into an external obstacle to their success which is a lack of housing units to be able to obtain for clients to rent.

	2021	2022	2023
# PH exits from ES	1,117	1,375	1,718
# PH exits from RRH	334	394	505
Total PH Exits	1,451	1,769	2,223
Current RRH housed/year	(252)	(252)	(252)
Current PSH turnover rate	(50)	(50)	(50)
Additional PH Exits	1,149	1,467	1,921

The number of permanent housing options the modeling suggests may need to be available in Santa Cruz is substantial. However, the current data and assumptions associated with these estimates are grounded in a historical landscape that has seen many recent shifts. The simultaneous impacts on the housing market of COVID, the fires, eviction moratoria, an economy in recession with continuing recovery uncertainty, and population decline cannot be predicted. Regardless of what the outcomes may be from these unprecedented changes and challenges, based on the current shortage of housing units overall and ELI units in



particular, it is unlikely that ending homelessness in Santa Cruz County can happen without developing additional affordable permanent housing units.

V. CONCLUSION AND RECOMMENDATIONS

Focus Strategies has developed a modeling approach and tested a range of scenarios for what can be accomplished over the next three years through a combination of changes to the inventory of beds in the homeless system and improvements in the performance of homeless system programs. The selected scenario that has been integrated into the Three-Year Strategic Action Plan assumes:

- Half of the temporarily added new COVID-19 shelter inventory will be made permanent, for an addition of 145 year-round, service enriched shelter beds;
- The system will add 350 additional rapid rehousing slots (200 units in Year 2 and 150 units in Year 3) and 100 new permanent supportive housing slots (all in Year 3); and
- Performance targets will be established for each program type consistent with the recommendations above and achieved along three measures: rate of entry from literal homelessness, length of stay in programs, and exit rate to permanent housing.

Taken together, these changes will result in a 50% decrease in unsheltered homelessness and close to 30% decrease in total homelessness.

