MEMORANDUM

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TO Jonathan Moore, City of Salinas Community Development Department, Senior Planner

FROM Tammy L. Seale, Climate Action and Resilience Principal
Eli Krispi, Climate Action and Resilience Senior Associate
Lauren Willey, Climate Action and Resilience Associate

SUBJECT GHG Emissions Reduction Pathway: Draft Results of CAP Strategy Quantification

Introduction

PlaceWorks is working with the City of Salinas to prepare a Climate Action Plan (CAP). The CAP will include strategies and actions to reduce greenhouse gas (GHG) emissions and adapt to climate change-related hazards. The GHG emissions reduction strategies and actions will address GHG emissions from community-wide activities and City operations and facilities. The CAP strategies will reduce GHG emissions and support adaptation and increased resilience to changing conditions. There are 21 strategies proposed in the CAP. Of these, 12 achieve measurable GHG emission reductions. The remaining nine strategies are focused on climate change adaptation and resilience and therefore do not have a measurable impact on GHG emissions in the community or the GHG emitting-activity is outside Salinas' jurisdiction.

This memo provides the initial draft results of the quantified benefit of the GHG emission reduction strategies and a brief overview of the strategy development process. The GHG emission reduction strategies as currently assessed do not fully achieve a level of reductions consistent with State targets, although there are opportunities to revise the strategies.

Strategy Results: Reductions in GHG Emissions

In alignment with guidance from the State, the City set a target to achieve an 85 percent reduction below 1990 GHG emission levels and net carbon neutrality by 2045, with an interim target of a 40 percent reduction by 2030 and a 70 percent reduction by 2040. Table 1 shows the total GHG emissions reductions achieved by the CAP strategies in 2030, 2040, and 2045 compared to the City's GHG emission reduction targets.

Table 2 lists the strategies and the draft GHG emission reductions achieved by them. Each quantified GHG emission reduction strategy has associated performance assumptions, which are estimated levels of participation by homeowners, businesses owners, City officials, and other community members in each strategy's implementation. The performance assumptions are based on what the project team deemed realistic for Salinas given its geography, demographics, history of climate action, as well as State-level estimates of climate action outcomes. Based on draft quantification, implementation of the proposed strategies in the CAP at the proposed participation levels, will not achieve the City's proposed emissions reduction targets. However, these strategies would result in substantial savings, including decreasing

natural gas use by 76 percent below 2019 levels, a 63 percent reduction in emissions from transportation, and tripling the amount of carbon dioxide sequestered by urban tree planting.

Table 1: GHG Emissions from Reduction Strategies ($MTCO_2e$) Compared to Targets

	2019 $MTCO_2e$	2030 $MTCO_2e$	2040 $MTCO_2e$	2045 $MTCO_2e$
Emissions without CAP	530,600	532,860	530,340	553,000
Emissions with CAP	530,600	420,660	266,870	205,840
Target [1]	Not applicable	389,050	194,520 [2]	97,260
Target Achieved?	Not applicable	No	No	No
Gap to Target	Not applicable	31,600	72,340	108,570
Percent Reduction Below 1990 Levels	18%	35%	59%	68%

1: The targets presented here are 40 percent below 1990 levels by 2030, 70 percent below 1990 levels by 2040 (SB 32 2016), and 85 percent below 1990 levels by 2045 (AB 1279 2022). In accordance with State guidance, the project team estimated 1990 levels to be 645,930 $MTCO_2e$, or 15 percent below 2005 levels.

2: The State does not have an official 2040 GHG reduction target. The project team interpolated this target between the 2030 and 2045 targets.

Strategies to reduce emissions from buildings and gasoline- or diesel-powered vehicles and equipment have the potential to achieve the greatest level of GHG emission reductions. Building new homes and businesses with electric, energy-efficient appliances, adding solar to buildings, and retrofitting buildings to be more energy efficient reduces GHG emissions over 35,500 $MTCO_2e$ in 2030, 105,720 $MTCO_2e$ in 2040, and 131,760 $MTCO_2e$ in 2045. The strategy to increase the adoption of zero-emission vehicles and off-road equipment reduces GHG emissions by 48,390 $MTCO_2e$ in 2030, 109,290 $MTCO_2e$ in 2040, and 149,270 $MTCO_2e$ in 2045. The strategies to reduce VMT through an increase in the use of transit or active modes of transportation, reduce GHG emissions 25,200 $MTCO_2e$ in 2030, 41,930 $MTCO_2e$ in 2040, and 56,030 $MTCO_2e$ in 2045.

Table 2: GHG Emission Reductions from Strategies ($MTCO_2e$)

Strategy	2030 $MTCO_2e$	2040 $MTCO_2e$	2045 $MTCO_2e$
Building Energy			
1. Retrofit existing buildings and facilities to reduce energy use, reduce reliance on non-renewable fuels, and improve comfort.	31,410	95,440	120,020

Strategy	2030 $MTCO_2e$	2040 $MTCO_2e$	2045 $MTCO_2e$
2. Accelerate all-electric and energy efficient construction of new buildings.	3,400	9,650	11,740
3. Increase access to solar energy and energy storage systems community-wide.	700	630	0
4. Expand opportunities for renewable energy on farms and agricultural energy production.	NQ	NQ	NQ
Transportation			
5. Promote infill development to reduce long commute times and vehicle miles traveled.	8,730	16,120	21,780
6. Expand public transit services to provide a feasible alternative to single-occupancy vehicles.	160	350	480
7. Make active transportation affordable, safe, fun, and easy.	5,610	8,210	11,180
8. Reduce commute-related vehicle miles traveled (VMT).	10,700	17,250	22,590
Zero-Emission Vehicles/Off-Road Equipment			
9. Accelerate the transition to zero-emission vehicles and equipment.	48,390	109,290	149,270
Water and Wastewater			
10. Reduce water use in buildings and urban landscapes.	310	370	290
11. Ensure the long-term stability and quality of Salinas' water supply	NQ	NQ	NQ
Solid Waste			
12. Increase diversion of compostable and recyclable materials from landfills.	590	1,250	2,020
13. Reduce the amount of waste created in Salinas.	2,210	4,920	7,800
Natural Environment			
14. Expand urban green space	less than 10	less than 10	less than 10
15. Improve Salinas' air quality.	NQ	NQ	NQ

Strategy	2030 $MTCO_2e$	2040 $MTCO_2e$	2045 $MTCO_2e$
Agriculture			
16. Reduce health and environmental impacts of agricultural operations.	NQ	NQ	NQ
17. Promote agricultural resiliency.	NQ	NQ	NQ
Municipal Operations			
18. Reduce resource use and GHG emissions from municipal operations.	NQ	NQ	NQ
Resilience			
19. Make resilience resources accessible across the community.	NQ	NQ	NQ
20. Facilitate evacuation and shelter in the event of an emergency.	NQ	NQ	NQ
21. Improve the structural integrity of homes, workplaces, and infrastructure to prevent damage from severe weather, including flooding, wind, and extreme heat.	NQ	NQ	NQ

NQ= not quantified. These strategies do not result in direct and measurable GHG emission reductions, although they may contribute indirectly to GHG emission reductions and result in other benefits to the community, including increased climate adaptation and resilience.

Attachment A provides specific details about the GHG emissions reduction strategies, including the results of the quantification process and the anticipated level of performance of each strategy. Among the 21 total strategies in the CAP, there are 12 strategies that result in direct and measurable GHG emissions, divided into six topic areas. For each strategy of these 12 strategies, the matrix details the following:

- Implementation Actions: These are specific actions that the City and its key partners could take to put the strategy into effect. These actions are not a comprehensive list of every action the City might take, nor do the estimates of GHG emission reductions depend on all implementation actions being put into effect.
- Participation Assumptions: These are the underlying assumed level of participation by Salinas households, businesses, and other community members. Each strategy may have multiple assumptions. Assumptions are shown for 2030, 2040, and 2045. There may be additional constants or other assumptions recommended by methodology protocol that are not shown here.
- Performance Indicators: These are the measurements of how many community members or other participants will take the specified action by 2030, 2040, and 2045 in order to result in the modeled GHG reductions, consistent with the assumptions. The City can track the number of participants taking action as a way of monitoring how the CAP is being implemented.

- GHG Emissions Reduction: This is the level of GHG emissions reductions achieved in 2030, 2040, and 2045 by the strategy, given the assumptions. Strategies that only reduce electricity use will not result in GHG reductions from the CAP in 2045 as the statewide electricity supply is projected to be carbon-free by then in accordance with State law. These reductions are already accounted for in the projections of future emissions with existing and planned policies.

Progress to the Targets

As noted above, the strategies as currently quantified do not fully achieve a level of reduction consistent with State targets. The levels of GHG emission reductions included in this memo reflect what the PlaceWorks team believes is a reasonable performance from these strategies, given community resources, local characteristics, and levels of state and regional support. The City is able to achieve its established targets by increasing the performance of selected strategies, by implementing actions not currently included in the draft strategies, or some combination of both. For example, the City's existing Urban Forest Management Plan assumes a 2.5% increase in the tree canopy over the next 40 years. This can be increased to achieve greater sequestration of GHG emissions. Similarly, the CAP strategies assume a 25 percent, 55 percent, and 70 percent light-duty zero-emission vehicle (ZEV) adoption rate for 2030, 2040, and 2045 respectively. These are lower than the predicted adoption rate for the state of California for 2040 and 2045, which are 69 percent and 86 percent respectively, as Salinas' existing light-duty ZEV adoption rate is currently lower than the state average. According to the California Energy Commission, in 2023, 1.3% of vehicles registered in Salinas were ZEV versus 5.2% statewide.

Next Steps

City staff should review the results of this memo, including the participation assumptions of each quantified measure in Attachment A, to ensure that these levels of performance are feasible and, identify any strategies where performance assumptions could be potentially increased. Additionally, staff should also consider any potential reduction opportunities not currently identified. PlaceWorks will discuss these changes with City staff following review of the GHG emission reduction strategy results, and then will make any necessary adjustments to the strategy assumptions and incorporate these revisions into the CAP document.