



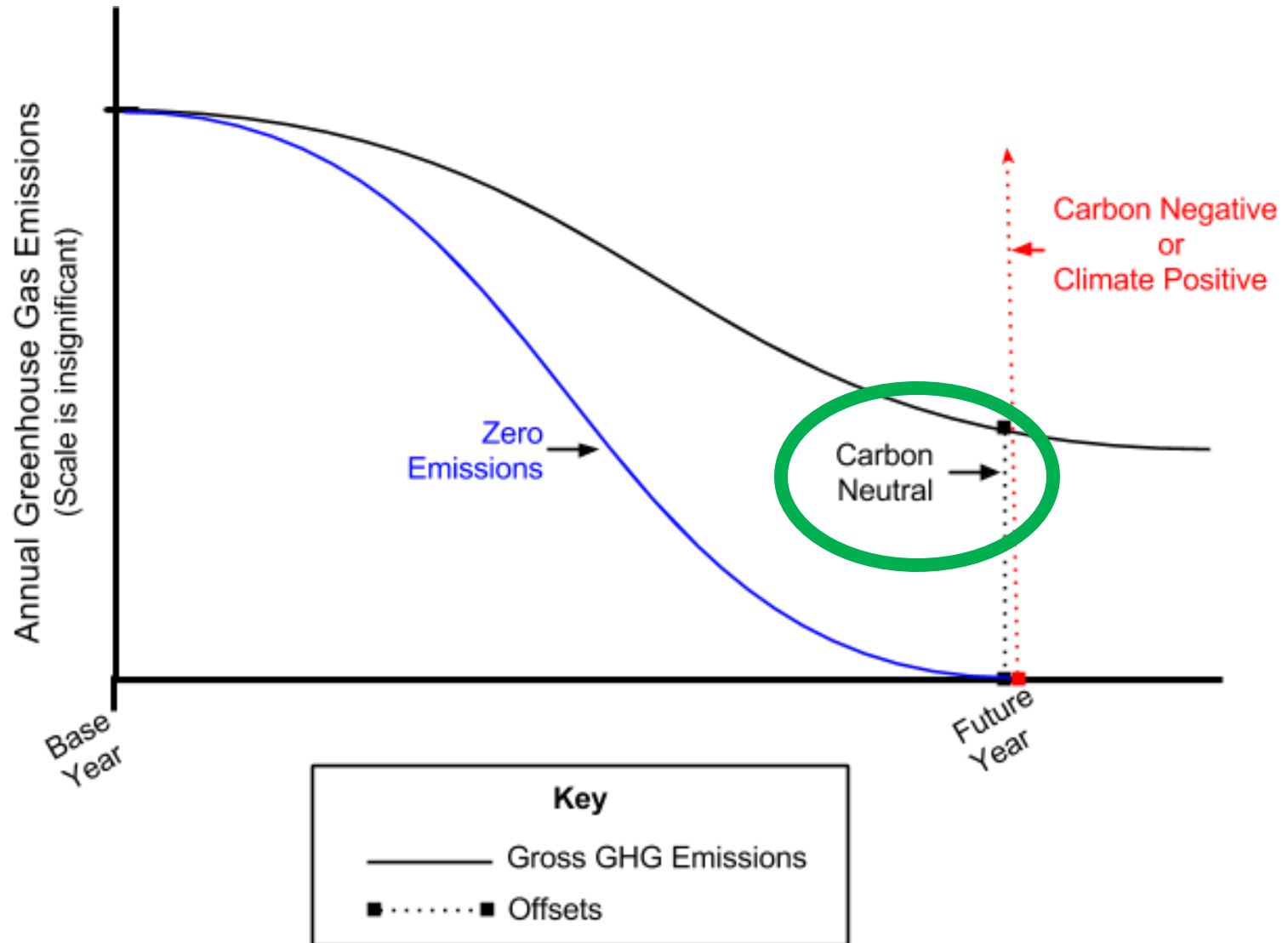
Hermosa Beach Municipal Carbon Neutral Plan

February 24, 2015
Presentation to City Council

Recent Municipal Climate Action Timeline

Date	Timeline
June 2013	Council approves Clean Fleet Policy & Master Plan
October - December 2013	Council Approves Energy Reduction and Cost Savings Projects for municipal
March 2014	Council adopts “Municipal Carbon Neutral Action Plan” as a Top Priority for 2014 Policy Agenda
June 2014	“Assessing Options to Deliver Carbon Neutral Electricity to the City of Hermosa Beach” → Recommendation for Community Choice Aggregation
June 2014	Begin work on Municipal Carbon Neutral Plan
October 2014	Municipal Carbon Neutral Plan Draft to City
November 5, 2014	Presentation to City Council
February 4, 2015	Community Meeting to Discuss Final Municipal Carbon Neutral Plan Recommendations

Carbon Neutral Goal



Direction from Council on Draft Plan



Prioritize cost-effective reduction options



Early actions / Quick Implementation



Visible progress on renewable energy generation, alternative fuel vehicles, and employee commutes

What will it Cost?

To be a leader:
Carbon Neutral Municipal
Operations By 2020

Less than \$2,000 per year

\$1,971 projected average annual cost over 30 years

\$59,130 total cost over 30 years

What will it Cost?

To be First:
Carbon Neutral Municipal
Operations By 2017

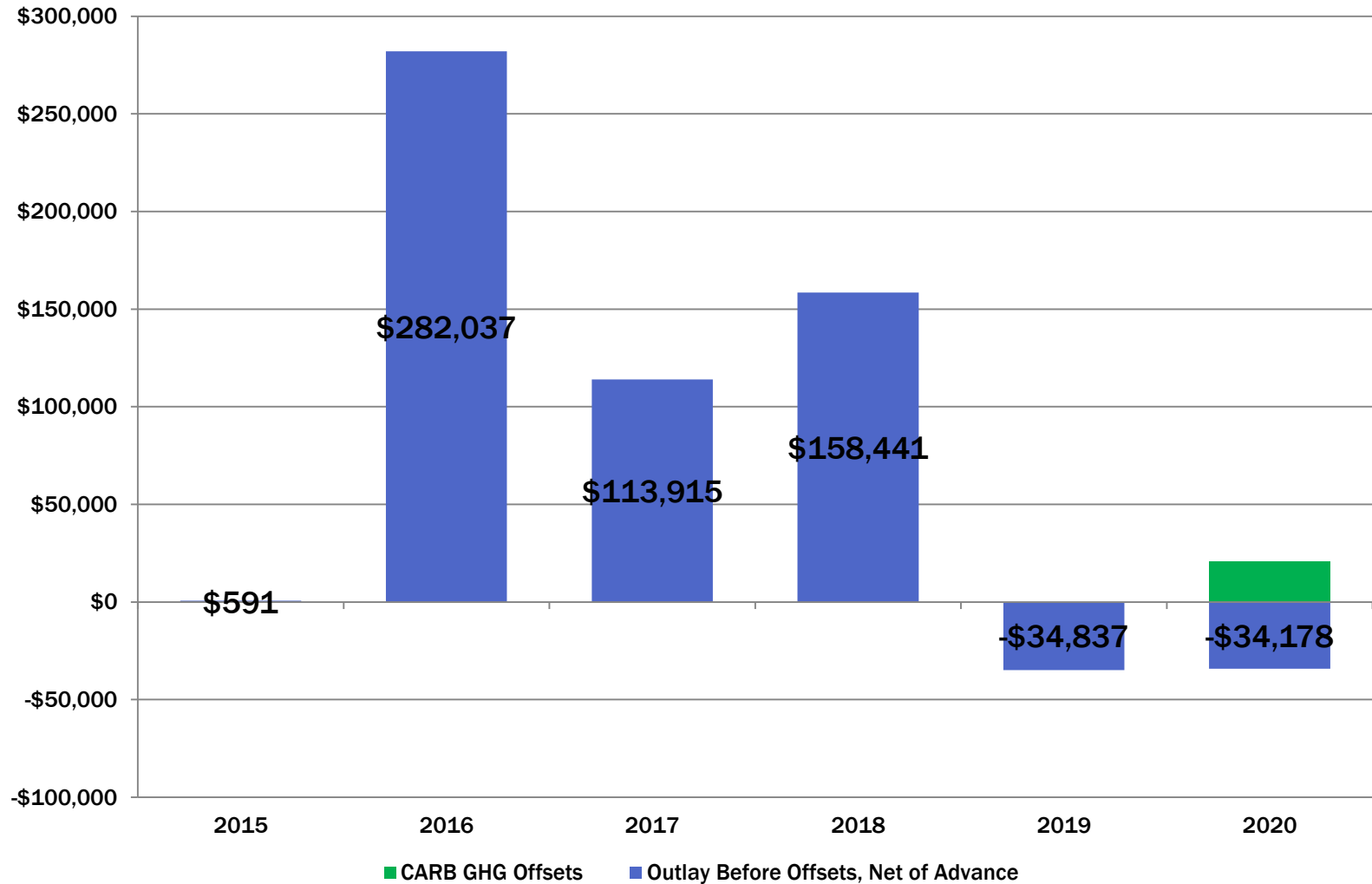
An additional \$52,475 over 3 years

\$3,720 projected average annual cost over 30 years

\$111,605 total cost over 30 years

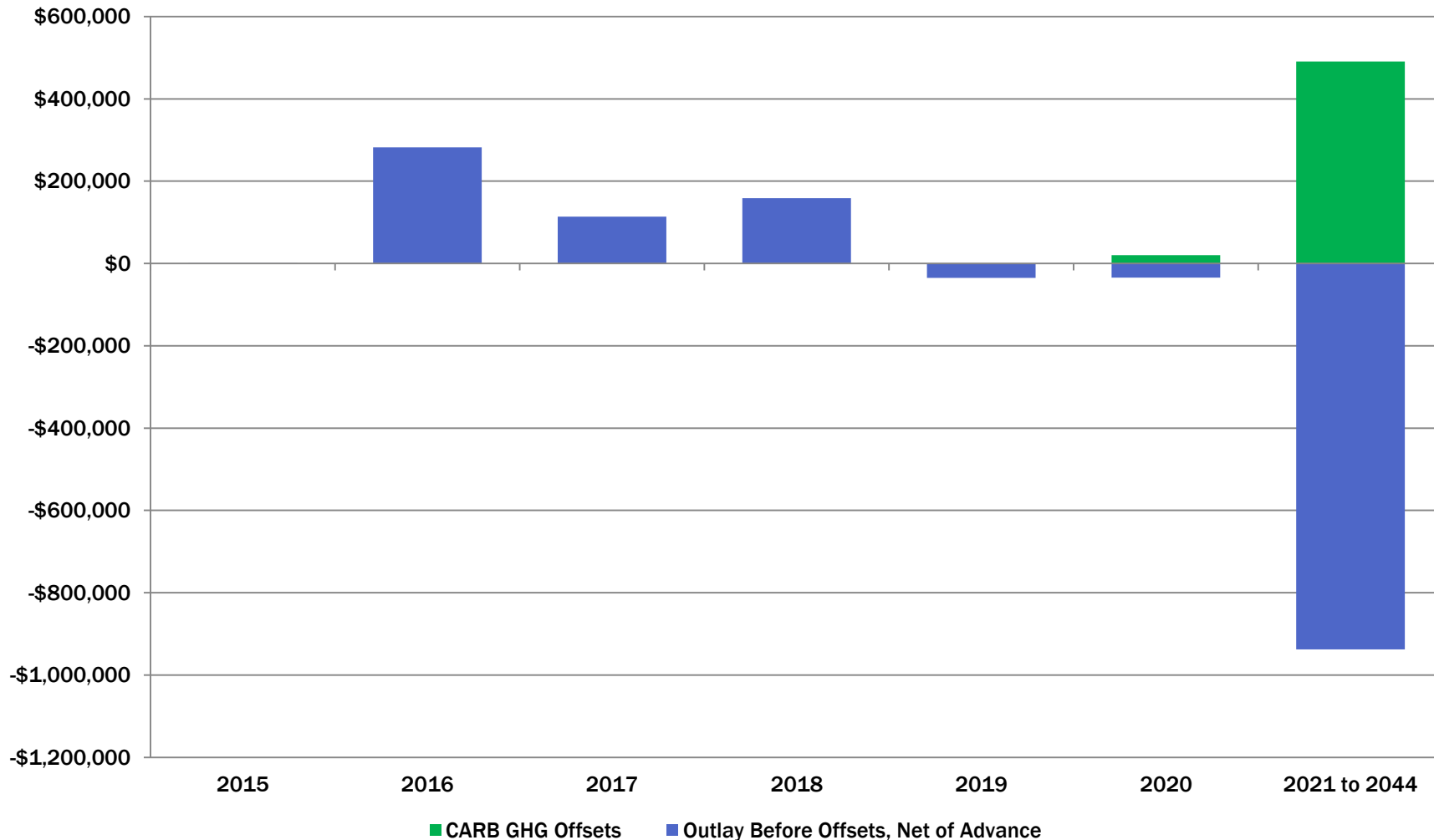
What to budget?

Annual Cost of Municipal Climate Action Program



30 Year Projections

Annual Cost of Municipal Climate Action Program



Sector

Recommendations

Electricity	<ul style="list-style-type: none">● Purchase municipal electricity through CCA starting in 2017● Dedicate \$30,000 net costs toward Solar PV through PPA or municipal lease● Pursue any cost-effective solar PV project● Pursue GSE Solutions “Project 2”● Dedicate additional \$236,094 to GSE Solutions retrofit projects with payback >10 years
Municipal Fleet	<ul style="list-style-type: none">● Continue to implement <u>Clean Fleet Policy and Master Plan</u>; dedicating an additional \$250,000 for acceleration/implementation● Purchase 5 regular bicycles, 5 electric-assist bicycles, and 2 Neighborhood Electric Vehicles for shared fleet & employee commute use● Dedicate \$50,000 for EV chargers and infrastructure for use by City fleet and employee vehicles
Employee Commute	<ul style="list-style-type: none">● Assign 0.2 FTE (assistant) as the City’s Employee Transportation Coordinator● Increase commute reduction incentive from \$30 to \$50/month
Other	<ul style="list-style-type: none">● Dedicate 0.25 FTE analyst to municipal climate action initiatives

Cost of Recommendations

Implementation Measure	Range in Cost (per MTCO2e)	Included?
<u>Electricity</u>		
Community Choice Aggregation	\$10 to \$18	Yes
Solar Photovoltaic Projects	-\$5 to \$20	Yes
GSE Solutions "Project 1"	-\$125 to -\$175	Yes
GSE Solutions "Project 2"	-\$225 to -\$275	Yes
GSE Solutions - Hot Water, HVAC	\$20 to \$35	Yes
<u>Municipal Fleet</u>		
Bicycle Fleet Program (Summary)	\$0 to -\$200	Yes (Bundle)
EV Fleet Program (Summary)	-\$50 to -\$150	Yes (Bundle)
<u>Employee Commutes</u>		
Employee Commute - Carpool Incentive	\$100 to \$200	Yes
Employee Commute - EV Incentive	\$500 to \$1,000	No

Other Costs: Staffing, GHG Offsets

Next Steps for Council

- Adopt key decisions by resolution:

Item	Options	Recommendation
Choose a Climate Action Goal	Carbon Neutral, Carbon Negative, or Zero Emissions	Carbon Neutral
Consider a goal for “Gross” GHG Emissions	Any percentage below 1990 to 2015 levels by some future year	40% below 2015 levels by 2020
Determine the Future Year by which the city will achieve neutrality	2017 to 2050; By 2020 to be seen as leader	Carbon Neutral by 2020

- Report the City’s decision to the Carbonn Cities Climate Registry
- Initiate a public education and outreach program



Thank You

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∞ WHERE THERE
IS NO VISION THE
PEOPLE PERISH

Details

Implementation Timeline

Phased Cost Details

GHG Emissions Projections

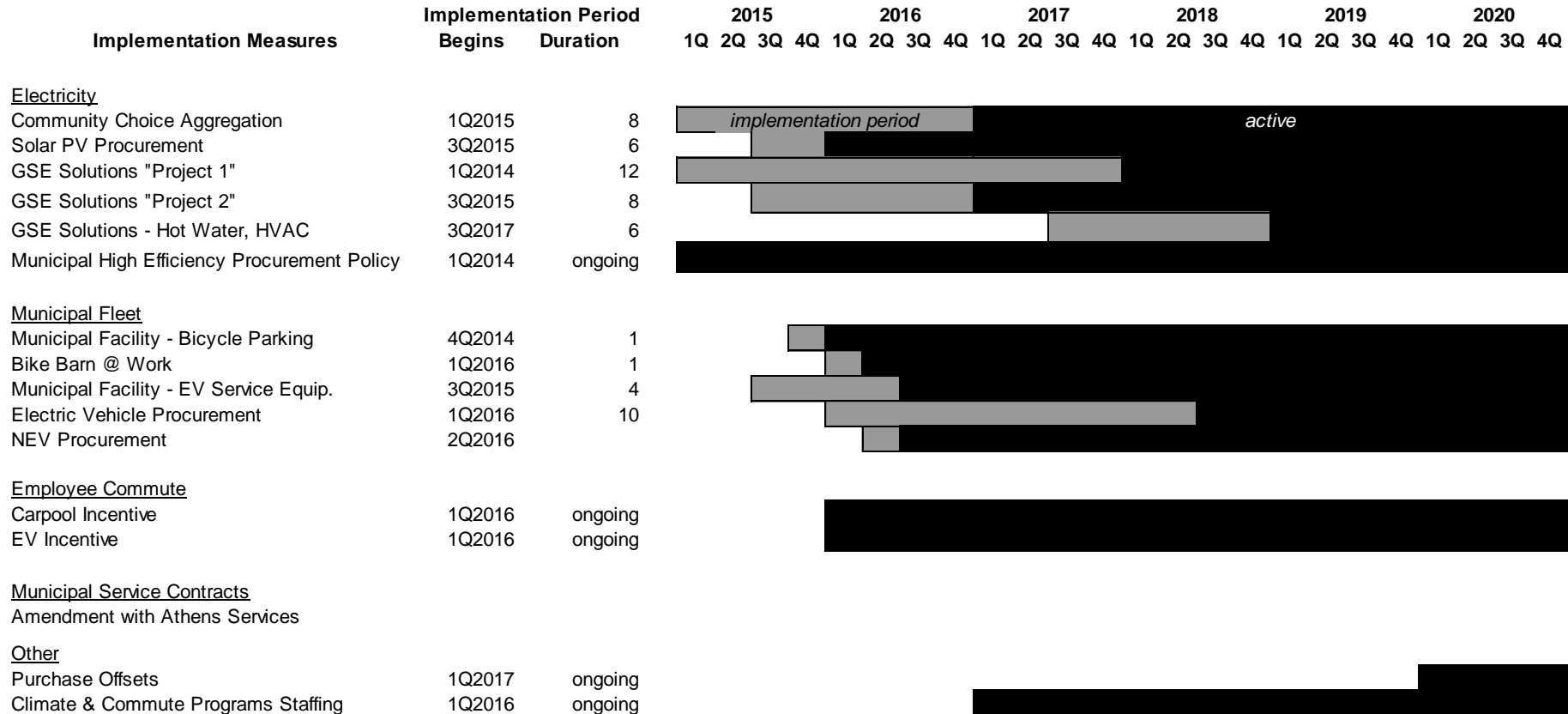
Economic Role of Offsets

Offset Quality



∞ WHERE THERE
IS NO VISION THE
PEOPLE PERISH

Recommended Implementation Timeline

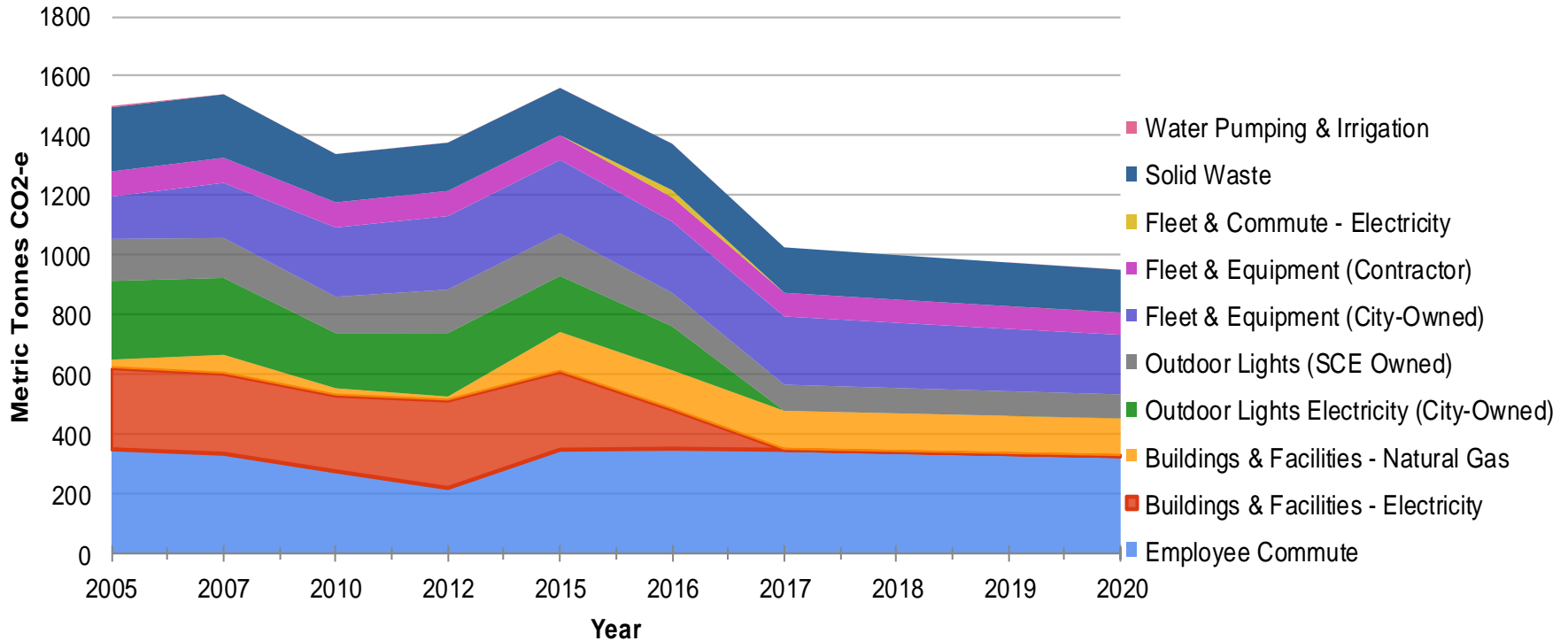


Financial Projections

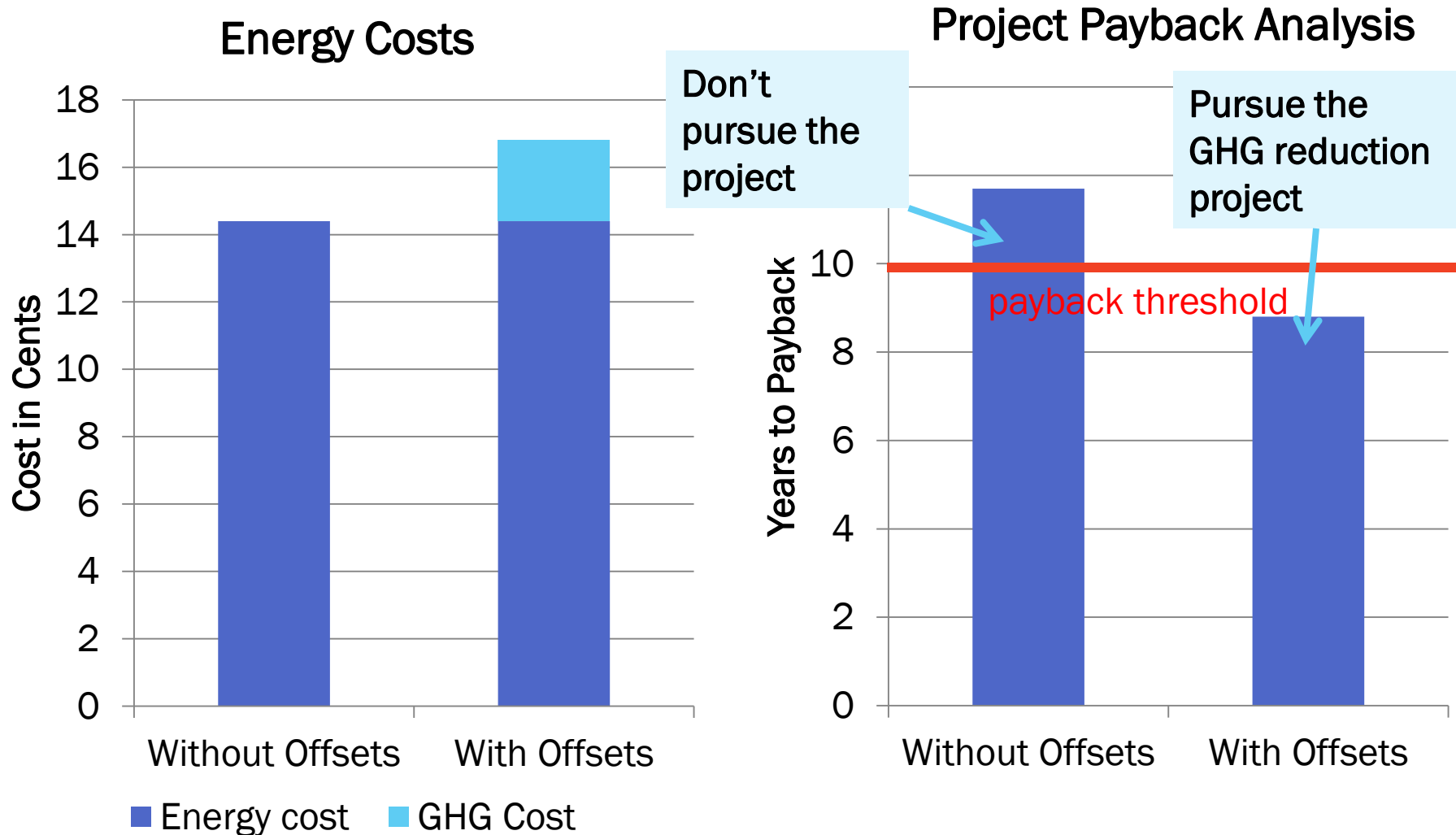
Implementation Measure	Cost Assigned	Notes	2014	2015	2016	2017	2018	2019	2020	2021 to 2044	Total
Electricity											
Community Choice Aggregation	Additional Costs of Procurement				\$0	\$18,309	\$14,119	\$9,193	\$4,501	\$90,024	\$136,147
Solar Photovoltaic Projects (ASE Solar Solutions Proposal)	Max upfront buydown of PPA Rate to Cost-Neutral (proposal requires no buy-down)				\$30,000	0	0	0	0	0	\$30,000
GSE Solutions "Project 1"	Outlay and annual savings		\$89,262	\$72,087	\$54,912	-\$51,524	-\$51,524	-\$51,524	-\$51,524	-\$1,236,576	-\$1,315,673
GSE Solutions "Project 2"	Outlay and annual savings			\$63,029	\$126,059	-\$23,792	-\$23,792	-\$23,792	-\$23,792	-\$571,008	-\$477,088
GSE Solutions - Hot Water, HVAC	Outlay and annual savings					\$53,785	\$107,571	-\$5,056	-\$5,056	-121344	\$29,900
Municipal Fleet											
Bicycle Parking	Infrastructure at City Facilities			\$7,500							\$7,500
Employee Bicycles	Procurement of 5 regular bicycles; 5 electric-assist bicycles	bikes replaced every 8.5 years			\$18,500					\$46,250	\$64,750
Mode Switching	Vehicle Operating Savings from Car -> Bike				-\$2,750	-\$2,750	-\$2,750	-\$2,750	-\$2,750	-\$66,000	-\$79,750
Bicycle Fleet Program (Summary)											
EV Service Equipment					\$50,000						\$50,000
Accelerate Clean Fleet Master Plan	Additional Costs for Procurement (versus BAU) - \$7,500 per vehicle				\$100,000	\$75,000	\$75,000			\$0	\$250,000
Fuel Switching	Operating Savings from \$3 to \$4 Gasoline -> Electricity	20000 mi/year			-\$3,859	-\$10,014	-\$18,908	-\$23,590	-\$22,333	-\$535,981	-\$614,685
EV Fleet Program (Summary)											
Employee Commutes											
Employee Commute - Carpool Incentive	Additional Costs for \$50 Incentive	5 adopters per year through 2020			\$1,200	\$2,400	\$3,600	\$4,800	\$6,000	\$144,000	\$162,000
Employee Commute - EV Incentive	Additional Costs for \$125 Incentive	5 adopters per year through 2020			\$7,500	\$15,000	\$22,500	\$30,000	\$37,500	\$900,000	\$1,012,500
Employee Commute Coordinator - Staffing	Additional Costs for Incentive	20% @\$100K/year			\$20,000	\$21,000	\$22,050	\$23,153	\$24,310	583443	\$693,956
Climate Programs											
Staffing - Analyst	Additional Cost of Managing All Climate Programs	25% @\$120K/year			\$30,000	\$31,500	\$33,075	\$34,729	\$36,465	729303.75	\$895,073
Total Costs											
Total Cost of All Projects			\$89,262	\$142,616	\$424,062	\$113,915	\$158,441	-\$34,837	-\$34,178	-\$937,889	-\$167,870
Estimated Advance from Equipment Replacement Fund			\$142,026	\$142,026	\$142,026						\$426,077
Outlay Before Offsets, Net of Advance			-\$52,764	\$591	\$282,037	\$113,915	\$158,441	-\$34,837	-\$34,178	-\$937,889	-\$593,946
CARB GHG Offsets	2021 - 2044 costs assume further reductions in gross GHG emissions		\$0	\$0	\$0	\$0	\$0	\$0	\$20,442	\$490,609	\$511,051
Total Cost After Offsets			-\$52,764	\$591	\$282,037	\$113,915	\$158,441	-\$34,837	-\$13,736	-\$447,279	\$59,130

Past Emissions Forecast and Future Emissions Inventories

Hermosa Beach Gross GHG for Municipal Operations



A Commitment to Neutralize GHG Emissions Changes the Payback Analysis



Which Offsets?

Advantages

Disadvantages

Voluntary



- Are 50% cheaper than California Compliance Offsets.
 - Sends a price signal
 - Offer a greater variety of projects.
- Most projects are located outside of California.
 - Perceived as lower quality

California Compliance



- Perceived as the highest quality offsets.
 - Establish a strong connection between Hermosa Beach and statewide actions; can help the City explain statewide actions including Cap-and-Trade program.
 - Use of CARB offsets additional emissions reductions within California; effectively reducing the statewide cap on GHG emissions.
 - Sends a price signal
- CARB offsets are more expensive; and these additional expenditures could be used to reduce gross emissions.
 - Potential difficulties with households and businesses within Hermosa Beach investing in the same offset project as the City.

Which Offset Projects?

U.S. Forest Project



Livestock Project



Use of forest offsets can create a tangible connection with a place

Mine Methane Capture Project

