



City of
Santa Rosa

Municipal Climate Action Plan



City Council
August 6, 2013

Goal 3: Provide Leadership in Environmental Initiatives

Objective 4: Develop a target for energy independence and GHG reduction

CCAP adopted by Council on June 5, 2012

Purpose of CCAP

- Help Santa Rosa community reduce GHG s
- Meet local and State GHG reduction targets
- Streamline environmental review of projects
- Comply with Bay Area Air Quality Management Dist.
 - Qualified GHG Reduction Strategy

MCAP Purpose

- Reduce GHGs from City’s municipal operations
- Meet local and State GHG reduction targets
- Provide roadmap for implementation
- Align with City Council Goal 3
 - * Provide Leadership on Environmental Initiatives

MCAP Components

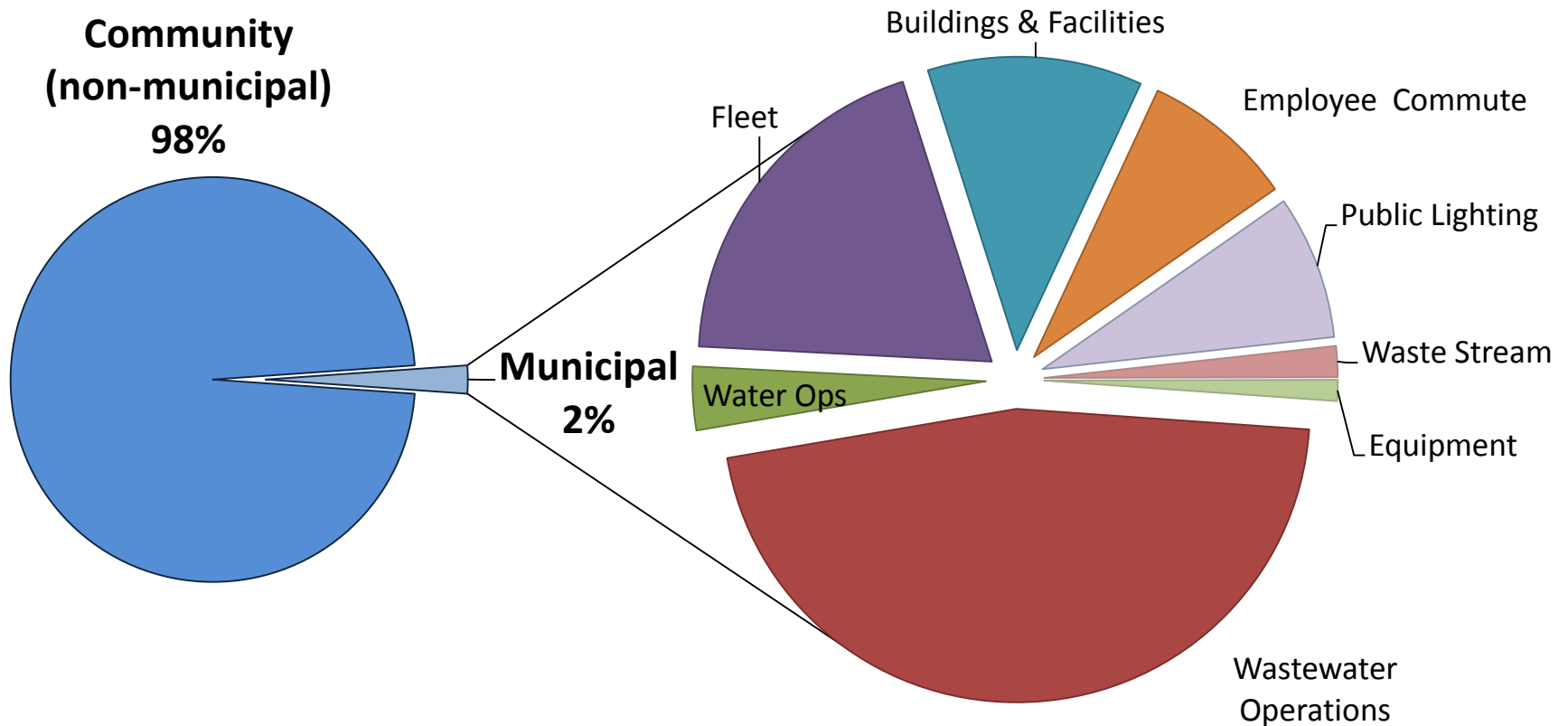
- GHG Inventories and Reduction Targets
- GHG Reduction Opportunities
- Funding Strategies
- Project Groups
- Implementation
- Appendices

Municipal GHG Reduction Targets

GHG Target	Description
City 2010 Target	20% below 2000 levels by 2010
State 2020 Target	Return to 1990 levels by 2020
State 2050 Target	80% below 1990 levels by 2050

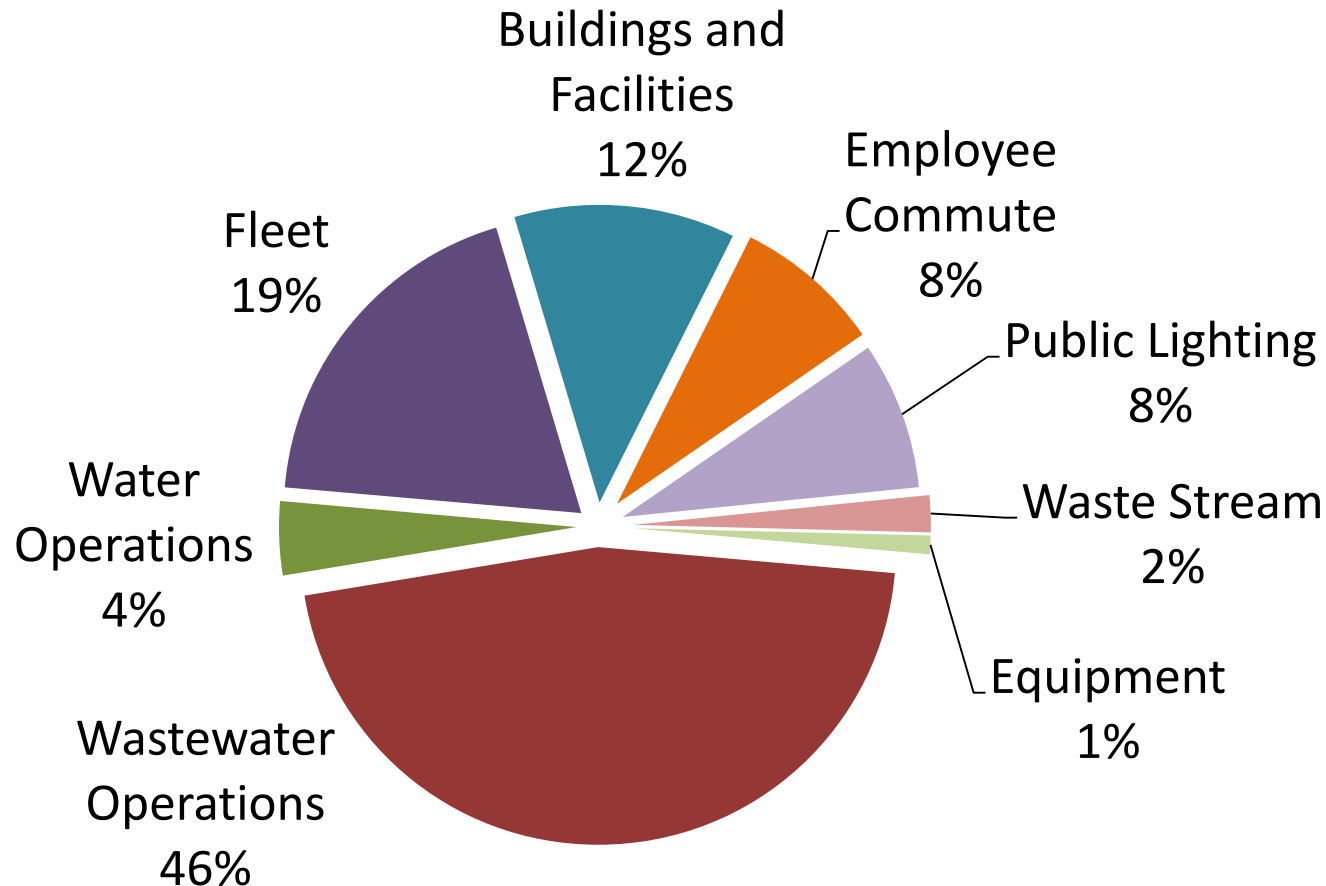
2007 Community-wide GHG Emissions

1.35 million metric tons of CO₂ equivalents (MTCO₂e)



2007 Updated Municipal GHG Emissions

2% of total = 29,436 metric tons of CO₂ equivalents (MTCO₂e)



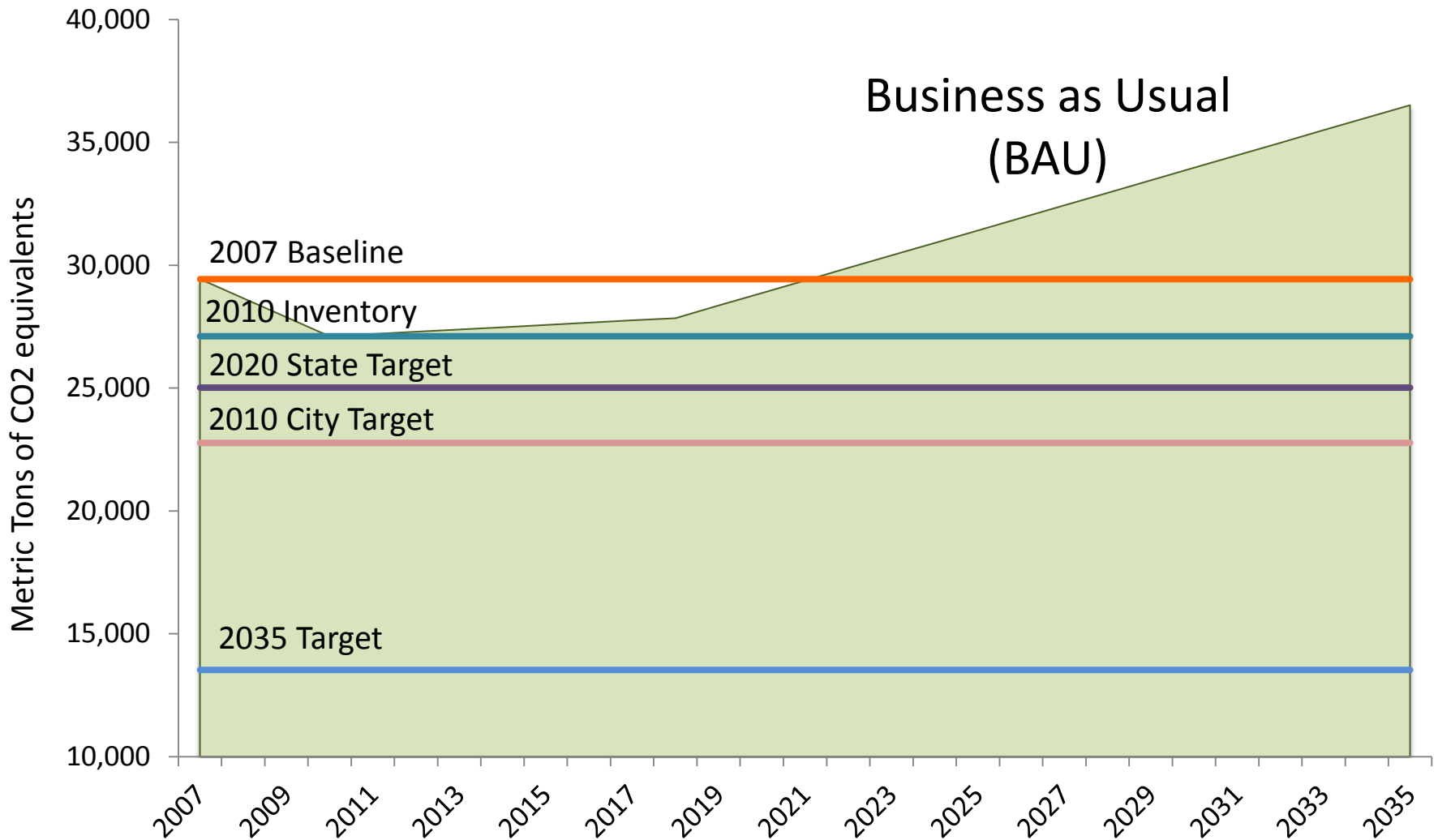
Municipal GHG Emissions Inventories

Year	Emissions (MTCO₂e)
2000 inventory	28,465
2007 baseline	29,436
2010 inventory	27,107
Percent Change	
2000 to 2007	Up 3%
2007 to 2010	Down 8%
2000 to 2010	Down 5%

GHG Targets and Reductions Needed

Target Description	Upper Limit (MTCO ₂ e)	Reduction from 2010 (MTCO ₂ e)
City 2010 Target = 20% below 2000 emissions	22,772	4,335
State 2020 Target = Return to 1990 emissions (15% below 2007)	25,020	2,087
Interpolated 2035 Target = 50% below 2007	13,580	13,527
State 2050 Target = 80% below 1990 emissions (83% below 2007)	5,004	22,103

Business as Usual (BAU) Forecast



Nearly 100 options identified in MCAP

- Not every project will be implemented
- Options address these sectors of municipal operations

Wastewater operations

Water operations

Buildings and facilities

Waste stream

Employee commute

Public lighting

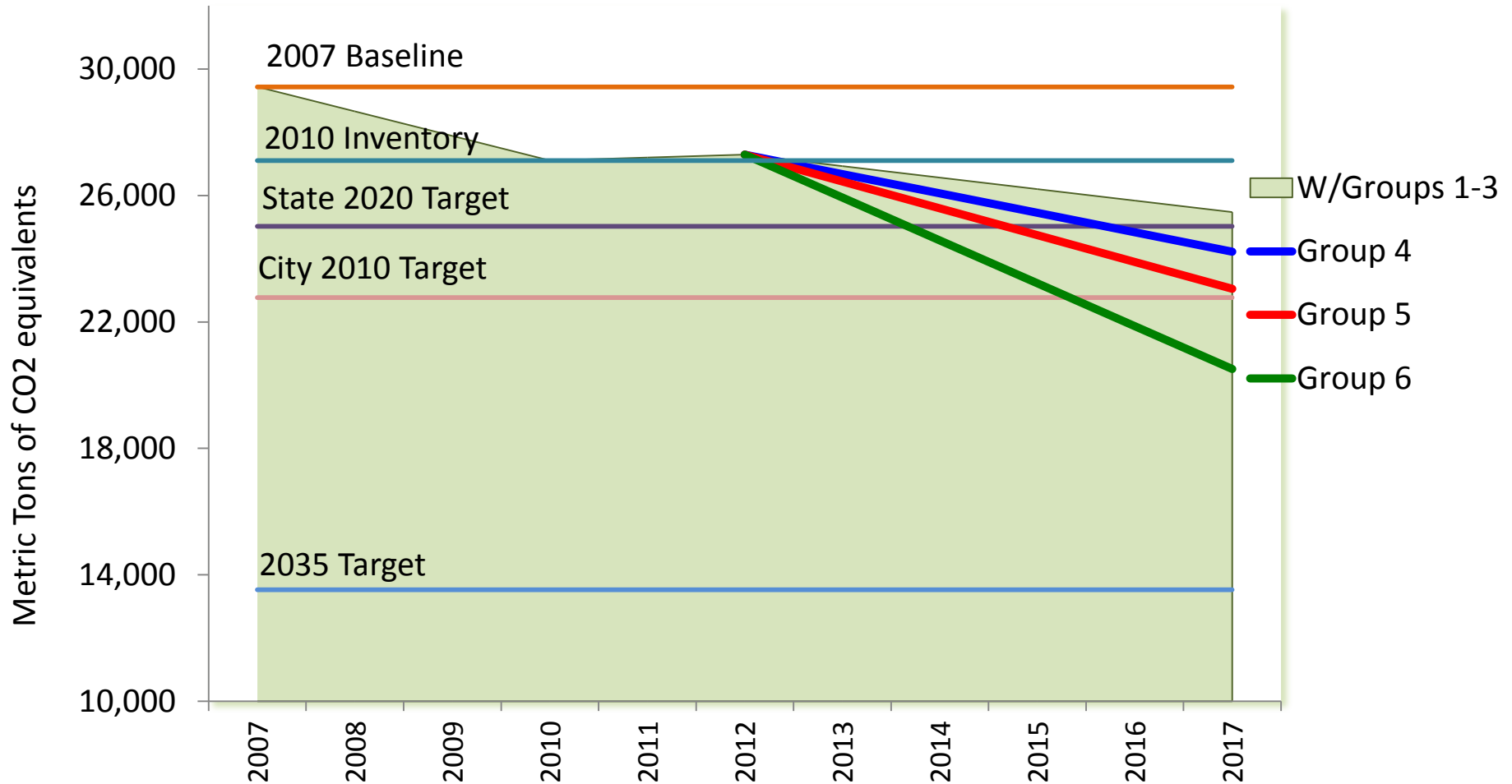
Fleet

To facilitate timely and cost efficient implementation

- Group 1: Already in progress or scheduled
- Group 2: $MIRR^* > 10\%$
- Group 3: $MIRR^* > 5\%$
- Group 4: Install 1 megawatt solar PV array at LTP
- Group 5: Upgrade buses & street lighting fixtures
- Group 6: Purchase cleaner power

** Modified Internal Rate of Return – the annualized return that will be realized from an investment. Accounts for maintenance costs, the life of the project, energy escalation rates, reinvestment rates, and inflation/deflation rates.*

Municipal GHG Reductions: Forecast and Targets



Emphasis is on cost effectiveness

- Striving for net increase in City revenue

Potential strategies

- Direct purchase
- Financing
- Third Party Ownership
- Accumulative Capital Outlay Fund
- Design-Build
- Project Bundling

Chapter 6: Key purpose of the MCAP

- Roadmap and Guiding Principles
 - Efficient and cost effective implementation
- Implementation Team
 - Develop Project Implementation Plan
 - Develop Measurement and Verification Plan
 - Update Plans, GHG inventory, and MCAP

2012 – 2017

- Recognizes that some projects were started and/or completed while MCAP was being written.
- Allows time to course correct and still meet State 2020 GHG reduction target.

- MCAP falls within the scope of the Final Supplemental Environmental Impact Report prepared for the CCAP and associated General Plan amendment (adopted on June 5, 2012).
- Adoption of the MCAP does not approve projects identified in the document.
 - Projects will require subsequent environmental review and approval prior to being undertaken.

Public Review

- Posted on City's website on May 28, 2013
- Public invited to comment June 1 – 30
 - Link emailed to 52 individuals and organizations
 - Announced at interagency meetings and activities
- Presented to Board of Public Utilities in a study session on June 20, 2013

Board of Public Utilities Recommendations

- Clarify that the MCAP project list is neither exhaustive nor mandated with the adoption of the MCAP.
- Clarify that potential projects will need to be vetted for operational requirements and implications prior to implementation.
- Delete references to floating systems on ponds for solar projects at the Laguna Treatment Plant
- Specify that Utilities Enterprise Fund projects must be bundled separately per Proposition 218.
- Clarify that the coefficients in Appendix 2 are used to calculate GHG reductions.

Recommendation

It is recommended by the Utilities Department and the Community Development Department that Council, by resolution, adopts the Municipal Climate Action Plan.

QUESTIONS

Additional reasons for reductions [here](#)

Sample financial analysis [here](#)

Corrected [here](#)

Sample cumulative cash flow [here](#)

Corrected [here](#)

Corrected [here](#)

Assumptions for financial analysis [here](#)

CCAP 2007 community-wide GHGs pie chart [here](#)

GHG baseline and targets bar chart [here](#)

Some emissions reductions from 2007 to 2010 appear to be related to changes in the economy.

- Reductions in water purchases by customers
- Streetlight Reduction Program
- Outsourcing park and landscape maintenance work
- Reductions in staff levels
- Cleaner Federal/State vehicle standards

Sample Financial Analysis

Group	Net Cost	Cost Savings	MIRR	NPV	MTCO ₂ e Saved/yr	% of 2010 Target
G1	\$1,201,227	\$574,535	50.6%	\$12,241,724	1,329	31%
G2	\$1,518,833	\$671,050	46.7%	\$13,002,362	1,603	37%
G3	\$4,492,310	\$916,946	22.1%	\$17,972,540	2,128	49%
G4	\$10,270,796	\$1,187,387	11.8%	\$19,908,487	3,069	71%
G5	\$12,571,570	\$1,439,070	10.9%	\$20,404,908	4,242	98%
G6	\$15,440,538	\$1,610,477	9.8%	\$21,992,707	7,127	164%

Corrected Sample Financial Analysis

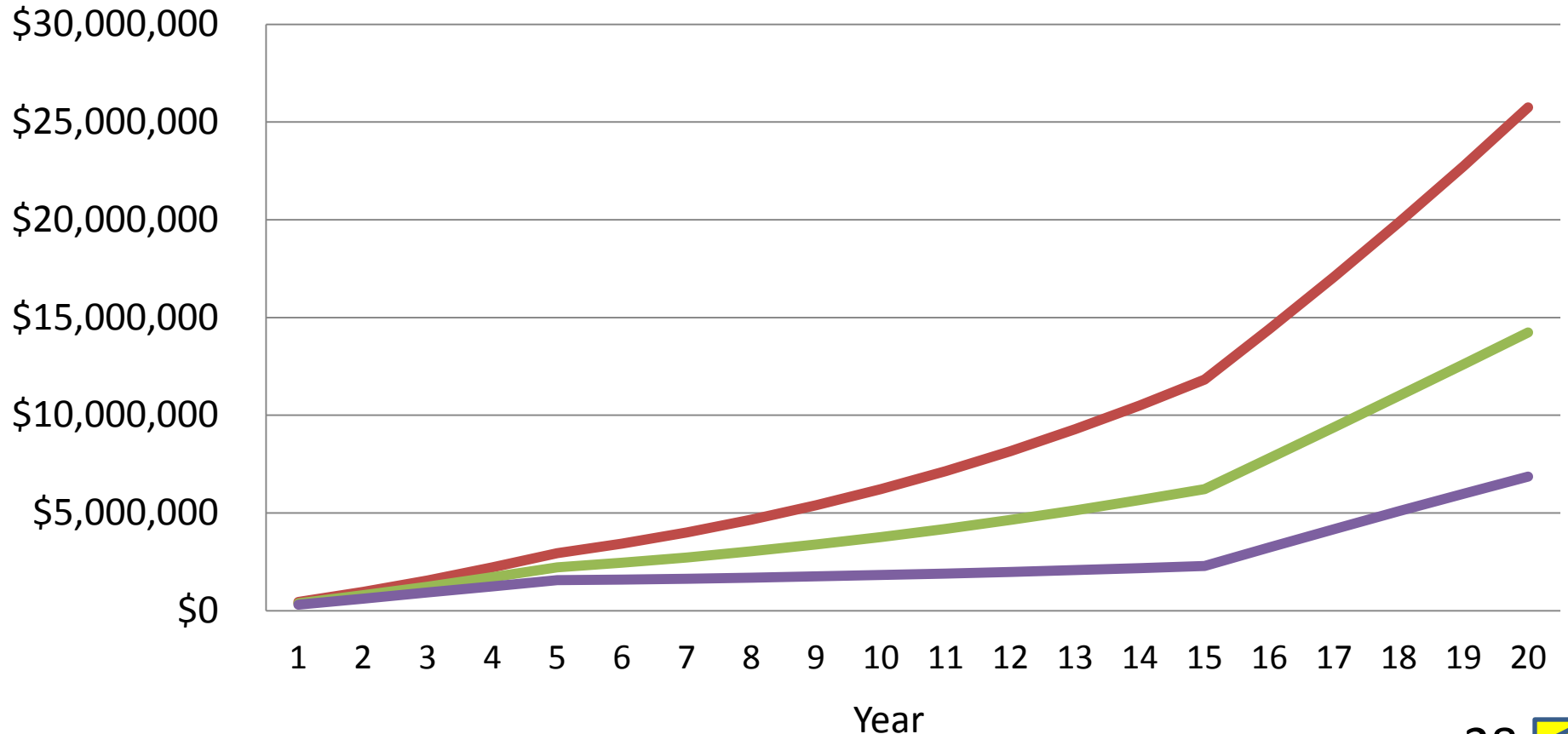
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G6	\$12,571,570	\$1,439,070	10.9%	\$20,404,908	6,785	157%

Corrected Financial Analysis Cash Flow

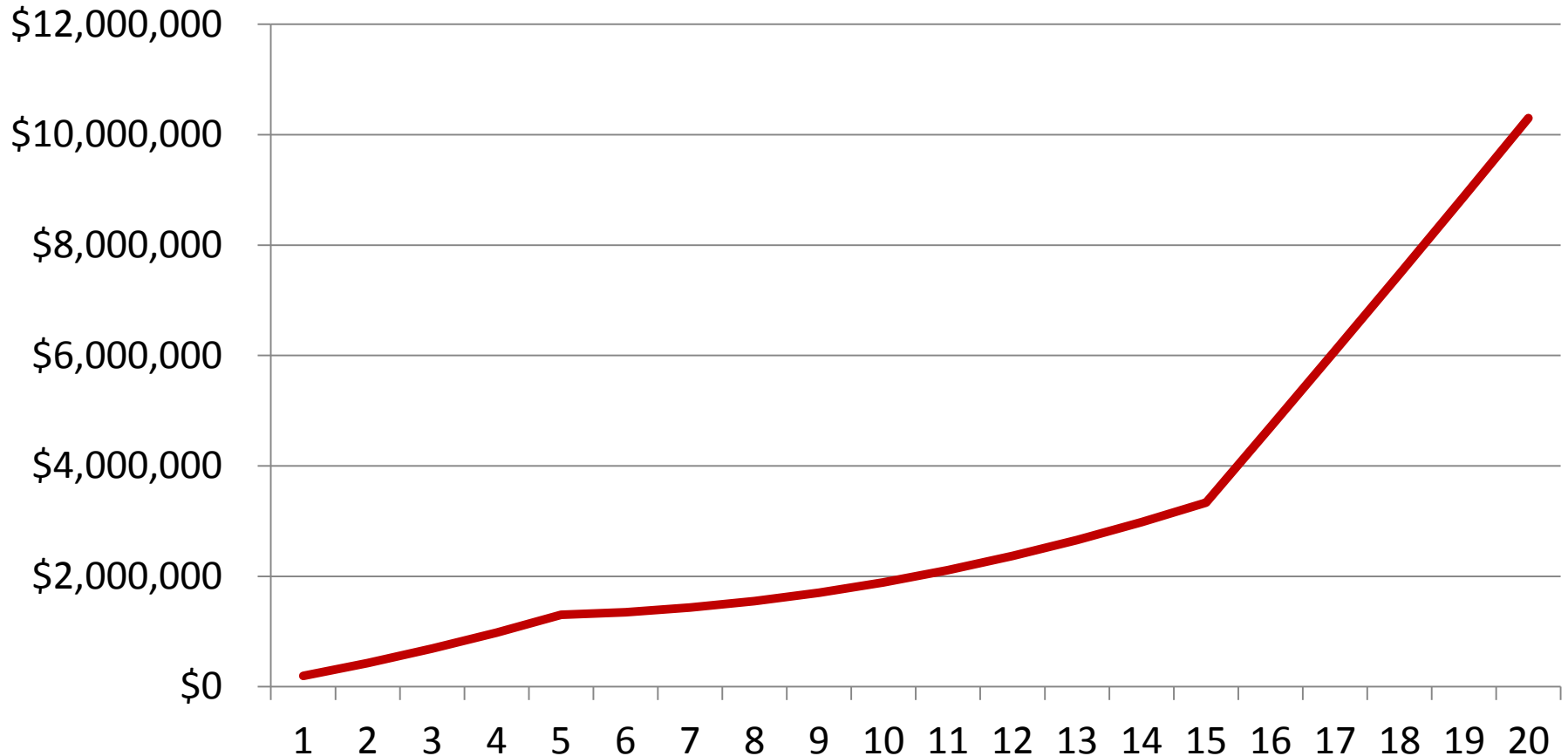
Energy Cost Escalation	3.0%
Loan Term	15
Loan Interest Rate	5.0%
Estimated Cost	\$11,951,947
Project Administration	\$597,597
Contingencies	\$1,195,195
Total Cost	\$13,744,739
Rebates	\$1,681,151
Savings	\$1,187,387

Net Value of Investment

Realistic Conservative Very Conservative



Cumulative Discounted Cash Flow

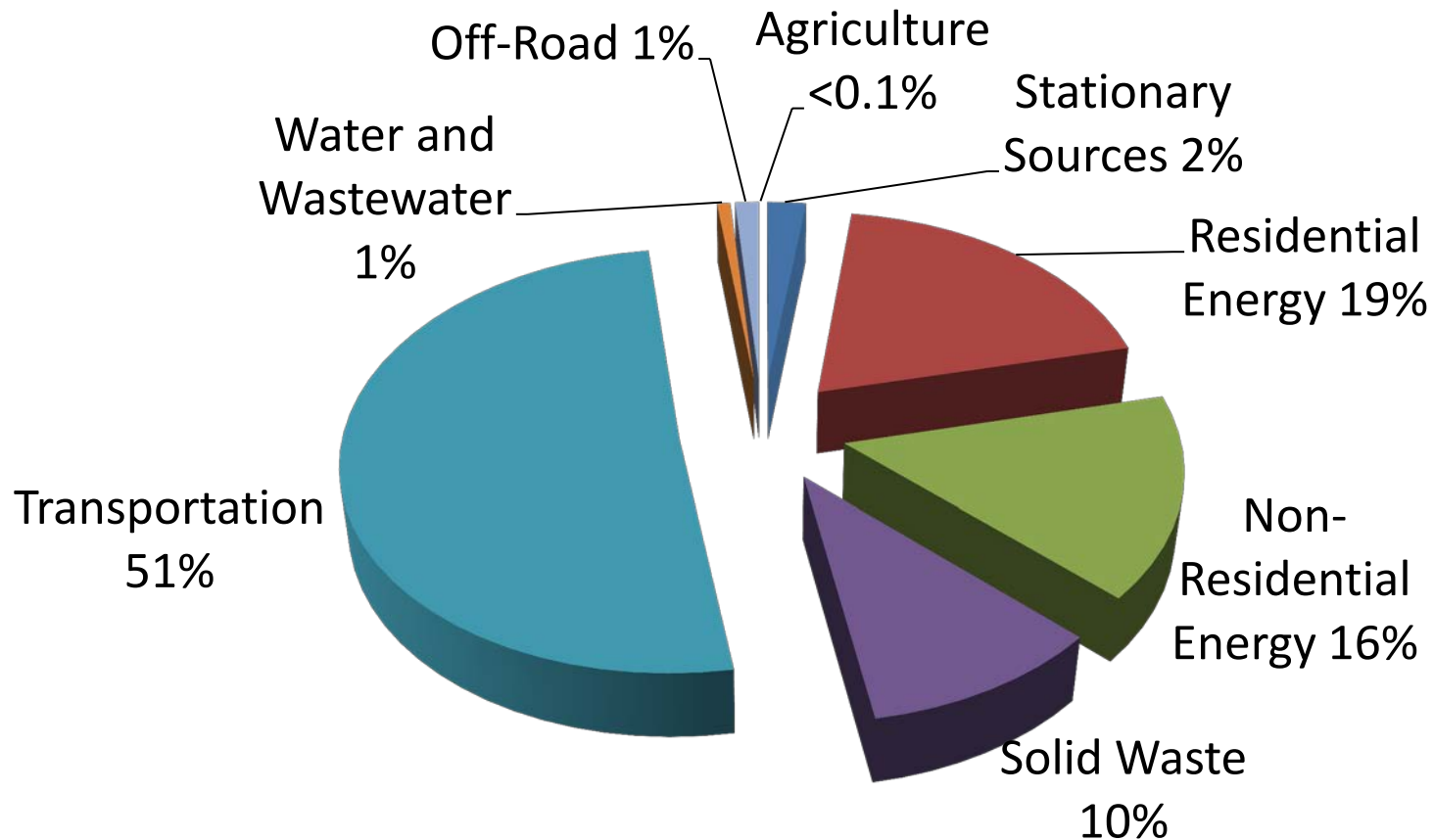


Financial Analysis Assumptions

Component	Realistic Outcome	Conserv Outcome	Very Conserv Outcome
Energy Savings - % of expected	102%	95%	90%
Energy escalation rate	5.0%	3.0%	1.0%
Discount / inflation rate	1.0%	2.0%	3.0%

2007 Community-wide GHG Emissions

1.35 million metric tons of CO₂ equivalents (MTCO₂e)



GHG Baseline and Reduction Targets

