UTSA | Texas Sustainable Energy Research Institute

Proposed Approach for

City of San Antonio Climate Action and Adaptation Plan (CAAP)

Prepared by:

Lead Investigator: Hazem Rashed-Ali, PhD

Co-Investigators: Roger Enriquez, JD
John Merrifield, PhD
Keith Muhlestein, PhD
Francine Romero, PhD
Hatem Sharif, PhD
Rob Tillyer, PhD

In consultation with and submitted to:

City of San Antonio: Douglas Melnick, CSO, AICP, ISSP-SA, CNU-A
CPS Energy: Rhonda Krisch

September 30, 2017

TABLE OF CONTENTS

1. INTRODUCTION AND OVERARCHING OBJECTIVES

This document describes proposed approach for developing the City of San Antonio Climate Action and Adaptation Plan (CAAP), as well as the proposed schedule for the project and the roles and relevant expertise of the UTSA team members. CAAP is a collaborative project between the University of Texas at San Antonio (UTSA), the City of San Antonio (CoSA) and CPS Energy. The proposed approach is based on the scope of work prepared by the City of San Antonio and is informed by available guidelines for developing climate action plans (e.g. Carbon Neutral Cities Alliance, 2017; C40, 2017, Carbon Disclosure Project (CDP), Global Covenant of Mayors, 2017; Prazen, 2009; STAR Communities, 2017), by available GHG inventory protocols, methodologies, and assessment tools (e.g. CIRIS, 2017; CURB, 2017; GHG Protocol, 2014; ICF International, 2013; ICLEI, 2013; TCR, 2010), as well as by previously developed climate action plans for major US cities (e.g. Austin, Chicago, Portland, San Diego, Washington DC).

A Climate Action and Adaptation plan (CAAP) is a strategy document that outlines a collection of measures and policies that reduce GHG emissions based upon a reduction target, as well as evaluates climate-related impacts and provides strategies to adapt and build resilience. Using the GHG emissions inventory as the foundation, a CAP defines GHG reduction goals based on local priorities for reducing emissions and provides the guiding framework for achieving those goals. The CAAP will cover the community sector, as well as municipal operations. The proposed approach for developing a CAAP for the City of San Antonio aims to achieve the following objectives:

1- CAAP will be informed by existing best practices from across the US and will utilize state-of-the-art protocols, tools, and methodologies for developing GHG inventories.
2- CAAP will include a rigorous stakeholder and community engagement component aiming to solicit equitable and demographically representative input from different sources and from all possible stakeholder groups, and to develop a sense of ownership and shared responsibility between these different groups. Particular emphasis will be placed on developing methods to reach underrepresented populations.
3- CAAP will be developed in the context of and in collaboration with the existing SA Tomorrow plans including the sustainability, comprehensive and transportation plans, as well other relevant city and partner agency plans.
4- CAAP will aim to achieve the highest levels of accuracy possible, within the limitations of existing data, in establishing a GHG emissions baseline, future emissions projections, and determining the share of different GHG emission sources.
5- CAAP will explore both mitigation strategies, aiming to reduce or prevent the emission of GHGs, and adaptation strategies aiming to prepare the community, municipal government operations, and other key sectors for the unavoidable impacts of climate change. Strategies achieving both objectives will also be identified.
6- CAAP will explore a wide range of mitigation and adaptation strategies including existing CPS Energy and City programs as well as best practices from other cities, and will aim to, as accurately as possible, assess the impact of each strategy on the GHG emissions as well as other associated benefits and costs, including any possible co-benefits on issues such as public health, air quality, economic development, employment opportunities, etc. All co-benefits will be quantified in economic terms, when possible.

7- The project team will work with CoSA, CPS Energy, and other stakeholders to develop realistic and achievable GHG emissions reductions targets and time frames, as well as to develop effective implementation plans that have the potential of reaching these reduction targets in the desired timeframe. The goals of the Paris Climate Accord will be utilized as one of those scenarios.
8- CAAP will develop easy-to-understand metrics both for reporting GHG inventory baseline and projections at multiple levels as well as for tracking progress towards achieving the plan's reduction targets. Methods of tracking and reporting this progress will also be developed.

2. STRUCTURE AND APPROACH

The following section will provide a brief description of the different tasks involved in the developing the Climate Action and Adaptation Plan. Figure 1, Page 10, presents a summary diagram of the process. A detailed schedule with milestones and deliverables is included in Section 4. The description below represents the overall framework and expectations of the different project tasks. More detailed work plans may be developed for some of the tasks at later points within the framework described below.

2.1. Establish Project Structure

The first phase of the project involves working with CoSA and CPS Energy to develop the project's reporting and decision-making structure. This will include regular meetings with CPS Energy and the City as well as presentations to City Council Committees. The phase will also include establishing a steering committee and technical advisory committee(s). These committees should include representatives from various stakeholder groups across the City. A meeting schedule and a structure allowing for effective communication and sufficient feedback loops between the UTSA team and these committees will be developed. This task will also include developing coordination mechanism with the SA Tomorrow plans including any ongoing implementation activities.

2.2. Background Research

In parallel with establishing the project structure, the project team will conduct extensive research in a number of areas to inform the subsequent phases of the work. These areas include:

- Researching best practices from across in the US including successful climate action plans, effective mitigation and adaptation plans and strategies, GHG inventory protocols, climate projection protocols, equity frameworks for climate action, engagement strategies, relevant methods and tools, and other best practices and lessons learned from similar activities.
- The City utilized the U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions (USCP), the Global Protocol for Community-Scale Greenhouse Gas emissions (GPC), and the Local Government Operations Protocol (LGOP) for the 2014 and 2015 greenhouse gas inventories. An expedited comparison of existing GHG inventory protocols and tools, identifying their scopes and the emissions sources they cover, and investigating the availability of data needed for them will be undertaken. The preference of both the UTSA team and CoSA is to utilize existing best practices for municipal and community climate action planning provided the required data is available.
  Reviewing all existing policies, programs and initiatives in CPS Energy and the City, as well as other local entities, which offer potential for reducing GHG emissions or adapting to climate change. Quantifying the potential impact of these policies, programs, or initiatives in terms of GHG reductions, economic costs and benefits when possible.

Based on this research and based upon best practices in municipal and community climate action planning, the team will make recommendations regarding the geographic scope of the inventory, emissions sources to be included, and GHG inventory methodology to be used.

Deliverables:

- *Summary of Research of Best Practices*
- *Proposed Methodology for Project Approach including GHG inventory, Climate Projection, Economic Cost-Benefit Analysis, and Co-Benefit Analysis.*

2.3. Develop a Community Engagement Plan

The success of this project will be supported the development of an extensive and effective and equitable community engagement plan that solicits input from all possible stakeholder groups and builds a sense of shared goals and ownership in the community. This plan will be developed in collaboration with CPS Energy, CoSA and other relevant organizations. All engagement materials will be in English and Spanish. A preliminary description of the approach which will be used in developing this plan is included in section 3.

Deliverables:

- *Community Engagement Plan*

2.4. Develop Communications Plan

This task includes the development of marketing and communications plan to ensure effective communications to the community and stakeholders as to the plans purpose, process, and outcomes. This plan will be developed and implemented by the key project partners: CoSA, CPS Energy, and UTSA, as well as other partner agencies and organizations. The plan may involve additional or pro bono resources from CoSA, CPS Energy, or other partner agencies and organizations if available.

Deliverables:

- *Communications Plan*
- *Memos and presentation materials for City Council and other stakeholder meetings, as needed.*

2.5. Establishing a GHG Inventory Baseline

This task will include updating the City's current 2014 GHG Inventory to 2016 data and making any additions or modifications in geographic scope or emissions sources that may be needed based on the scope and methodology selected in 2.2. The inventory will include both the community emissions as well as the emissions of the municipal government operations. Simplified metrics and infographics will be developed for the GHG inventory that could be communicated with the public in a meaningful way (e.g. emissions/household).

This will be followed by backcasting the GHG inventory to 1990 (the Kyoto Protocol) or as far back as possible given the availability of needed data. This backcasted value will represent the benchmark for the process of identifying the reduction target discussed later, as well as display emissions trends (gross and per capita). The team will also explore the potential for developing a geographic distribution of emissions and emissions metrics across different regions in the City with the intent of informing the equity framework to be discussed later.

Deliverables:

- *GHG 2016 Baseline*
- *Historic GHG Trends Analysis in Gross and Per Capita, by Household, and by Sector*

2.6. Develop Future Emissions Scenarios (Pathways), and Wedge Analysis

This task will include developing a business-as-usual emissions scenario (Pathway) that assesses community emissions and emissions from municipal government operations in 2050 or other suitable dates based on best practice. This process will be based on projected growth patterns, economic growth projections, climate projections study (to be discussed later), and other relevant information. These emissions will be analyzed into different emissions sources (wedges) such as stationary energy, grid energy, transportation and land use, water and waste, industrial processes, and agriculture and forestry (if applicable), as well as into the different emissions scopes (scope 1, 2, and possibly 3) as defined in the GHG protocol (GHG Protocol, 2014).

Other possible future scenarios achieving different reduction targets will also be identified and analyzed. GHG emissions will be broken down to the highest level of granularity possible given available data. This process will inform the selection of an emissions reduction target for the plan (discussed later).

Deliverables:

- *Four (4) GHG Emissions Targets and Wedge Analysis*
  - *Business as Usual (BAU)*
  - *Paris Climate Accord Compliant*
  - *Two (2) Additional Scenarios TBD*

2.7. Identify Mitigation Strategies

In this task, a range of mitigation strategies will be identified for mitigating both community emissions as well as emissions from municipal government operations. These strategies will include relevant existing City programs as well as new policies, programs, and initiatives. The identification and selection process will be coordinated with the City, CPS Energy, and technical and steering committees, and will be informed by best practices form other cities, in which these policies or programs have demonstrated success, as well as by input from different stakeholders through the public engagement process outlined previously. The strategy identification process will also be informed by strategies identified in the existing SA Tomorrow plans. Finally, the strategy identification process will be informed by the outcomes of the equity framework and smart cities framework analysis discussed next.

Deliverables:

- *Sector-based Mitigation Strategies for Community and Municipal Operations*

2.8. Mitigation Strategies Costs and Benefits

The potential future impact of each strategy, both for community emissions and for emissions from municipal government operations, on reducing the GHG emissions will be assessed and the associated benefits and costs calculated. This will also include the identification of any potential co-benefits such as impact on air quality, water quality, urban heat island, public health, economic development, employment opportunities, etc. The costs of not implementing these strategies will also be calculated based on the business-as-usual scenario. Public input on these strategies will be collected and analyzed

Deliverables:

- *For Community and Municipal Strategies*
  - *Analysis of:*
    - *Financial costs of mitigation strategies*
    - *Fiscal benefit of mitigation strategies, including cost avoidance*
- *Identification of co-benefits of mitigation strategies*

2.9. Determine GHG Reduction Target

Determining the GHG reduction target and timeframe is a key component of the Climate Action and Adaptation Plan and one that can have strong impact of the plan's potential for success. The team believes that the GHG reduction target should be realistic and possible to achieve within the selected timeframe. However, we recognize that the decision to adopt a specific target and time frame are sensitive decisions that need to be supported by different stakeholder groups and the public at large.

To achieve this, the team will assist the City, CPS Energy, and the other different stakeholders, through the public engagement process, in selecting a GHG reduction target, both for community emissions and emissions from municipal government operations, through developing a range of possible future scenarios and targets, the strategies needed for each, and the analysis needed for each scenario including reduction potential, and other costs and benefits associated with the scenario. Once a reduction target has been selected, it will be used in the strategy prioritization and implementation plan tasks addressed in sections 2.10 and 2.11.

Deliverables:

- *GHG Reduction Target for Community and Municipal Operations*
- *Wedge analysis for selected reduction target by sector depicting pathway to meeting target*

2.10. Prioritize Mitigation Strategies

This task is tied directly to the public engagement process. In it, the team will solicit input from different stakeholder groups about the prioritization of the possible mitigation strategies both for community emissions and emissions from municipal government operations. This will be achieved through working with the City, CPS Energy, the project's Steering Committee, as well as using different mechanisms to engage the public including the project website, social media, community forums, workshops, surveys, etc. Strategies selected for prioritization will be determined based on the GHG reduction target, timeframe, and scenarios identified previously.

Deliverables:

- *For Community and Municipal Strategies*
  - *Analysis and Prioritization of strategies based upon*
    - *Financial costs of mitigation strategies*
    - *Fiscal benefit of mitigation strategies, including cost avoidance*
    - *Co-benefits*
    - *Equity Framework*
    - *Community and Stakeholder Priorities*

2.11. Develop Implementation Plan

Based on the selected reduction targets, the team will develop an implementation plan for the selected strategies. The plan will be developed in close coordination with the City, CPS Energy and other stakeholder groups through the project's public engagement process. The implementation plan will include an analysis of emissions and financial costs and benefits, and will also be closely coordinated with existing implementation efforts in the SA Tomorrow plans. Implementation Plan with identify lead agencies, partner organizations, costs, timeframe, funding mechanisms, and co-benefits.

Deliverables:

- *Implementation Plan for Municipal and Community Mitigation and Adaptation Strategies*
  - *Identified Lead agencies and partners*
  - *Implementation Costs*
  - *Timeframe*
  - *Funding mechanisms*

2.12. Develop Adaptation Plan

As discussed previously, the adaptation process aims to identify strategies for preparing the community for the unavoidable impacts of climate change. This task will involve developing climate projections for the City of San Antonio through 2050. This process will utilize best practices in identifying relevant climate indicators that can affect City operations, key sectors, and the general public. These will include temperature indicators, precipitation indicators, and hybrid indicators (Hayhoe 2013). Future projections will then be developed for these indicators. The results will then be used to assess any negative impacts resulting from the expected climate changes on municipal government operations, key sectors, and the general public and using a scenario planning process to identify vulnerabilities, define and prioritize strategies and develop an implementation plan for selected strategies. The plan will include both community adaptation strategies as well as those for municipal government operations. Costs, benefits, co-benefits, and benefits of non-implementations will be calculated for each of these strategies similar to section 2.7. The analysis will also address any disproportional impacts the expected climate changes may have on vulnerable populations across the City (e.g. low-income communities, children, the elderly, etc.) and what adaptive capacities we can learn from them.

This process will be conducted in close collaboration with the different City departments, CPS Energy, other stakeholder groups, and through community engagement to ensure that the expected impacts, strategies, and implementation plan have the highest possible chance of success. A community engagement component will be also included for the adaptation plan similar to section 2.3.

Deliverables:

- *For Community and Municipal Strategies*
  - *Adaptation Plan Component*
    - *Climate Projections*
    - *Vulnerability Assessment for Community, Key Sectors, and Municipal Organization*
    - *Scenario Planning Results Document*

- *Identification, Analysis and Prioritization of strategies based upon*
  - *Financial Costs*
  - *Fiscal benefits including cost avoidance*
  - *Co-benefits*
  - *Equity Framework*
  - *Community and Stakeholder Priorities*

2.13. Equity Framework & Smart City Framework

Equity goals and an equity framework will be determined and utilized throughout the plan development process including engagement, steering and technical committee representation, and impact. The UTSA Team will, in parallel with the process of identifying mitigation and adaptation strategies and assessing their impacts, explore the relative impact of these strategies on different parts of the City. This will also be informed by the GHG baseline process in which, as much as possible, the City's GHG emissions will be distributed on different City areas. The goal of this process will be to make sure the selected strategies provide equitable benefits and do not cause any disproportional costs to different City areas. This task will also identify the strengths and potential lessons learned from populations that may be perceived to be vulnerable.

Similarly, the team will explore any potential overlap with existing City efforts in the Smart City area. Strategies that can offer potential for GHG reduction and are relevant to the Smart City Initiative will be identified and their benefits will be assessed. This will ensure that City efforts in both areas are aligned and implementation costs are reduced.

Deliverables:

- *Equity Framework*
- *Smart City Framework*

2.14. Write Climate Action and Adaptation Plan

The last phase of the work involvs finalizing the City's Climate Action and Adaptation Plan. The plan will address both community emissions and emissions from municipal government operations and will include a description of the process, emissions base line, future scenarios, reduction target, selected strategies, and implementation plan for each. The plan will also include a set of metrics to be used to assess progress towards achieving the goals of the plan and processes for tracking this progress over time and communicating it to different stakeholder groups and the general public. A summary report will be prepared for distribution to the general public. The Plan will be written in simple language with infographics and graphically well-designed., and will be in both English and Spanish.

Deliverables:

- *Draft Layout Document*
- *Draft Climate Action and Adaptation Plan*
- *Final Climate Action and Adaptation Plan*

3. APPROACH TO COMMUNITY ENGAGEMENT PROCESS

3.1. Goal:

Develop a comprehensive strategy to engage stakeholders (i.e., residents, the business community, non-profit organizations, environmental groups, the City of San Antonio, etc.) on a variety of topics that include, but are not limited to:

- Assessing stakeholders' knowledge of climate change
- Understanding current attitudes toward climate change
- Informing stakeholders of potential options
- Gathering feedback on potential options
- Communicating the CAAP Plan to stakeholders, outlining the benefits to them, and presenting options to assist with implementation

This approach must be inclusive, iterative, collaborative, and data-driven, and strive to be demographically representative of San Antonio's diverse population. Messages must be unique based upon stakeholder group and other socioeconomic considerations. Open, two-way communication is critical to accomplishing this goal and the broader CAAP project. Sufficient feed-back loops must be designed throughout the process. Methodological options to achieving this goal include: Surveys, Focus Groups, Neighborhood Meetings, Town Halls/Community Forums, Scenario Planning Exercises, Neighborhood Canvassing, Storytelling, using art to communicate about climate, Social Media Campaign, and Interactive Web-Site.

3.2. Phase 1: Pre-Plan:

- Work collaboratively with City officials to specify the community engagement plan including researching successful campaigns in San Antonio and other cities, identifying key audiences, identifying key messages, and developing messaging plan for specific audiences.
- Undertake stakeholder mapping exercise
- Potential data collection through the following methods:
  - Online forum to assess public understanding of climate change in our City/region
  - Host public meetings with panelists to explain the issue of climate change and how it affects the City/region now and into the future
  - Follow up meetings focused primarily on public input, with key City decision makers in attendance to listen and respond if appropriate
- Develop a data-informed report to assist in the development of the CAAP Plan
- Develop engagement process for internal CoSA stakeholders

Deliverables:

- *Community Engagement Plan to include at a minimum*
  - Design Template for Engagement Materials
  - Five (5) Community Meetings (North, South, East, West, Downtown)
  - Project Website

- Project Social Media Campaign
- Sector-based engagement activities
- Neighborhood-based Go-to-them strategies
- Volunteer engagement plan

3.3. Phase 2: Post-Plan

- Continue to offer an online forum to distribute the Plan and collect stakeholder feedback
- Initiate additional stakeholder meetings to provide details of the Plan and receive feedback; This may include specialized meetings with particular constituencies (i.e., the business community, environmental groups, etc.) to discuss the impact of the Plan
- Organize workshops to inform stakeholders of action steps they can take to assist in successful implementation of the Plan