

STATE OF TEXAS § CITY OF SAN ANTONIO - UNIVERSITY OF
COUNTY OF BEXAR § TEXAS AT SAN ANTONIO - CPS ENERGY
 § **INTERAGENCY PARTICIPATION**
 § **AGREEMENT FOR DEVELOPMENT OF A**
 § **CLIMATE ACTION AND ADAPTATION**
 PLAN

This Interagency Participation Agreement (hereinafter "Agreement") regarding the development of a Climate Action and Adaptation Plan ("Climate Plan") is made and entered into by and between the CITY OF SAN ANTONIO, TEXAS (the "City") a Texas home-rule municipal corporation, the University of Texas at San Antonio (the "UTSA") an agency of the State of Texas and academic component of The University of Texas System, and the City Public Service Board ("CPS Energy"), a municipally owned electric and gas utility owned by the City. Hereinafter, the City, UTSA, and CPS Energy shall be referred to individually as "Party" and collectively as "Parties."

WHEREAS, the City of San Antonio City Council voted to approve a Resolution of Support for the Paris Climate Accord and the Mayor's National Climate Action Agenda on June 22, 2017; and

WHEREAS, on September 22, 2010, CPS Energy and UTSA entered into that certain Collaboration Agreement under which CPS Energy agreed to fund approved research projects to be performed by UTSA intended to address key energy challenges facing the San Antonio community; and

WHEREAS, the development of the Climate Plan falls within the scope of the Collaboration Agreement; and

WHEREAS, CPS Energy has provided \$500,000 to UTSA for the development of a Climate Plan pursuant to the Collaboration Agreement; and

WHEREAS, the Scope of Work, attached as Appendix A, for the Climate Plan has been developed and agreed upon by the three Parties.

NOW THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

1. City Participation. The City agrees to:

- (a) provide overall project management and oversight of the development of the Climate Plan;
- (b) provide funding in the FY18 budget for a Climate Program Manager;
- (c) review and comment on all materials and provide timely response;

- (d) ensure communication and coordination with CPS Energy through the plan development process;
- (e) provide UTSA with examples of best practices in the field of climate action and adaptation planning;
- (f) provide oversight and coordination with the Mayor, City Council, City Council Committees, the Mayor's Climate Leadership Committee, the Community Climate Steering Committee, the Technical Advisory Groups, key partner agencies, and City departments;
- (g) provide staff resources to support the committees, as well as actively participate and collaborate with the UTSA team to coordinate and facilitate all community engagement activities;
- (h) secure and involve additional pro bono support for the plan development, including technical assistance;
- (i) leverage current City planning and resources to support the development of the Climate Plan;
- (j) serve as point of contact for all media and public speaking requests associated with the Climate Plan
- (k) provide timely review and approval of:
 - o Draft and Final Deliverables
 - o All engagement, communications, website, and plan documents and materials prepared or conducted under the Scope of Work during the term of this Agreement.

Approval shall be based on performance of the work in accordance with the Scope of Work, Appendix A.

2. UTSA Participation. UTSA agrees to:

- (a) implement the project tasks and produce the deliverables listed in the Scope of Work according to the description provided, to best practices, and with oversight from the City; UTSA will perform the work in accordance with the agreed upon Scope of Work.
- (b) work in close collaboration and coordination with other key project partners and will address any feedback, comments, or suggestions received from those key partners within the guidelines of this document and best practices;
- (c) work to be conducted by UTSA will be under the direct supervision of Principal Investigator (PI), Dr. Hazem Rashed-Ali, or other investigator at the discretion of UTSA;
- (d) participate in regular coordination meetings between the project leads from the different key partners as well as through comments and feedback on different project deliverables;
- (e) provide material, attend, and solicit input from the project's Steering and Technical Committees, as well as city council meetings, and from the community through the community engagement process, as needed to carry out the Scope of Work;
- (f) acknowledge receipt of the \$500,000 funding under the Collaboration Agreement;
- (g) ensure that the deliverables are in accordance with the Scope of Work and meet the requirements of this Agreement;

- (h) identify a contact to serve as a volunteer coordinator for the general public to identify opportunities to participate in the Climate Plan process.
- (i) notify City Project Manager of all information requests, including media and public speaking requests, associated with the Climate Plan prior to providing comment or speaking about the Climate Plan to any parties or at any events.
- (j) provide monthly progress reports to the City and CPS Energy.

3. CPS Energy Participation. CPS Energy agrees to:

- (a) provided \$500,000 to UTSA for the completion of the Climate Plan from funds authorized by the terms of the Collaboration Agreement;
- (b) actively participate in the development of the Climate Plan and serve on executive, steering, and technical committees as needed; and
- (c) leverage current CPS Energy resources to support the development of the Climate Plan as authorized by CPS Energy's management team.

4. Controlling Agreement. In the event that the terms of this Agreement conflict or are inconsistent with provisions of the Collaboration Agreement, the Collaboration Agreement shall control.

5. Notices. To be effective, notices provided under this Agreement must be in writing, and shall be deemed to have been received for all purposes upon the earlier to occur of (a) actual receipt, or (b) three (3) days after the same are mailed by U.S. certified or registered mail, return receipt requested, and addressed as follows:

If to CPS: CPS Energy
Attn: Director of Customer Solutions and Delivery
P.O. Box 1771
San Antonio, Texas 78296

With copy to: CPS Energy
Attn: General Counsel
P.O. Box 1771
San Antonio, Texas 78296

With copy to: CPS Energy
Rhonda Krisch
CPS Energy CAAP Project Lead
P.O. Box 1771
San Antonio, Texas 78296

If to City: City Clerk
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

With copy to: Director, Office of Sustainability
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

If to UTSA: UTSA
Attn: Hazem Rashed-Ali, Associate Professor
501 W. Cesar Chaves Blvd.
San Antonio, Texas 78207

With copy to: UTSA
Attn: Amy Ossola-Phillips, Director Research Service Center
Office of Sponsored Project Administration
One UTSA Circle
San Antonio, Texas 78249

With copy to: UTSA
Attn: Jessica C. Fernandez, Director Contracts & Industry Agreements
Office of Sponsored Project Administration
One UTSA
San Antonio, Texas 78249

Or addressed to such other address as is provided by written notice from one party to the other.

6. Termination for Cause. If UTSA fails to perform the services or deliver the deliverables contemplated herein and does not cure the failure within forty-five (45) calendar days of CPS Energy's written notice, CPS Energy may terminate this Agreement for breach. Parties acknowledge that repeated failures may constitute a material breach even if any failure taken individually does not constitute a breach or has been cured.

UTSA may terminate this Agreement, in whole or in part, in the event CPS Energy and/or City are in default of their material obligations under this Agreement and fail to remedy such default within forty-five (45) calendar days after receipt of written notice. This Agreement shall terminate upon expiration of the forty-five (45) day period.

Termination of this Agreement shall not affect the rights and obligations of the parties accrued prior to the termination. UTSA shall be entitled to payment for all reasonable expenses incurred or committed as of the effective termination date.

7. Termination at Will. CPS Energy may terminate this Agreement, in whole or in part, by giving UTSA thirty (30) calendar days' written notice. In the event of such termination, UTSA shall immediately stop work as to the terminated portion of the Scope of Work, notify all suppliers, subcontractors, and sub-suppliers to stop work on contracts for performance hereunder and to protect and preserve property in its possession in which CPS Energy has or may acquire an interest.

Termination of this Agreement shall not affect the rights and obligations of the parties accrued prior to the termination. UTSA shall be entitled to payment for all reasonable expenses incurred or committed as of the effective termination date.

8. Binding Effect. This Agreement will be effective and is conditioned upon approval from the CPS Board of Trustees by resolution, by the San Antonio City Council by ordinance, and by the UTSA's Authorized Signatory.

9. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Texas and shall be fully performable and enforceable in Bexar County, Texas.

10. Formal Matters. The relationship between CPS Energy, UTSA and the City under this Agreement shall be that of independent contractors and not that of partners, joint ventures or any other relationship. This Agreement, with the attached Appendix A, sets out the entire agreement of the Parties in connection with the subject matter addressed herein, and may be modified or amended only in a writing executed by the Parties.

11. Joint Administrative Committee. The Parties shall form a Joint Administration Committee (the "Committee"). The Committee will address contractual matters related to the Climate Plan and will not address any content related to the development of the Climate Plan. The Committee shall consist of the following six (6) members: (a) City Representative No. 1, the Director of Office of Sustainability; (b) City Representative No. 2, Legal Representative; (c) CPS Energy Representative No. 1, CPS Energy Project Team Lead; (d) CPS Energy Representative No. 2, CPS Energy Legal Representative; (e) UTSA Representative No. 1, UTSA Project Lead; and (f) UTSA Representative No 2, Legal Representative.

The work of the Committee shall be approved by unanimous vote of the Committee members and a written record will be created every time the Committee meets. All such records will be maintained by the City. Any Party member may call a meeting of the Committee. An official meeting need not be called in order for the Committee to act. For example, decisions of the Committee may be made through written correspondence, including email, as long as the Committee unanimously approves of the decision to be made in writing. Each Committee member may designate another individual to serve on the Committee if he or she is unable to attend a Committee meeting. Any vacancy on the Committee shall be replaced by appointment of a new Committee member by the remaining member of the Party whose Committee member was unable or unwilling to continue to serve or their institution. If the seats for Committee members for any of the three Parties are vacant, a replacement will be promptly designated by the City, CPS Energy, and UTSA as the case may be. The Committee cannot take any action unless all its members have voted on and approved of an item, whether the Committee meets formally or communicates through correspondence. In either event, the Committee will develop minutes of its formal or virtual meeting. The Committee may be terminated by approval of all Parties once the Climate Plan is completed and accepted by the City and all contractual compliance requirements have been met.

12. Confidentiality. To the extent authorized by applicable law, no reports, information, project evaluation, project designs, data or any other documentation developed by, given to, prepared by, or assembled by UTSA under this Agreement shall be disclosed or made available to any individual or organization without either the express prior written approval of the Committee or in accordance with Section 13. In the event a party receives any such request, the party shall forward such request to the Committee as soon as possible.

Parties shall establish a method to secure the confidentiality of records and information that Parties may have access to under this Agreement, in accordance with the applicable federal, state, and local laws, rules and regulations. This provision shall not be construed as limiting UTSA's, City's or CPS Energy's right of access to records or other information under this Agreement.

Parties shall comply with their respective confidentiality procedures pertaining to records and other information in accordance with the applicable Federal laws, State laws, the San Antonio City Charter, City ordinance, rules and regulations.

However, the confidentiality obligations under this Agreement shall not apply to information that is:

- a) already in a Party's possession at the time of disclosure;
- b) later becomes part of the public domain through no fault of the recipient Party;
- c) received from a third party having no obligations of confidentiality to the disclosing party;
- d) independently developed by the recipient Party; or
- e) required by law or regulation to be disclosed.

In the event that information is required to be disclosed pursuant to subsection (e) above, the Party required to make disclosure shall notify the others to allow those Parties to assert whatever exclusions or exemptions may be available to it under such law or regulation.

13. Publication and Academic Rights. The Parties understand that UTSA is a state institution of higher education that engages in research services compatible with, consistent with, and beneficial to its academic role and mission; therefore, UTSA's Principal Investigator has the right to publish or otherwise publicly disclose information gained in the course of the research project under this Agreement, provided such publication or disclosure is consistent with the terms of the Collaboration Agreement. UTSA will, however, submit any prepublication material to City and CPS Energy for review and comment prior to any planned submission for publication. The City and CPS Energy will notify UTSA of any objections in a timely manner. UTSA shall have final authority to determine the scope and content of any publications, subject to any reasonable objections for the protection of confidential information and any contractual commitments under the Collaboration Agreement. UTSA shall acknowledge City's and CPS Energy's contribution and describe in any publications, and the scope and nature of City's and CPS Energy's contribution accurately and appropriately. Pursuant to the Collaboration Agreement CPS Energy and UTSA shall share ownership of copyrighted reports.

14. Ownership of Materials and Documents. Any and all drawings, documents or information in whatsoever form and character produced by UTSA pursuant to the provisions of this Agreement is the joint property of UTSA, City, and CPS Energy and any Party shall be allowed to make use of such material without requiring the approval of the other Parties. UTSA understands and acknowledges that as the joint owner of any and all writings, documents and information, City, and CPS Energy has the right to use all such writings, documents and information as the City and CPS Energy desires, without restriction. As the Climate Plan will be an official City Plan formally adopted by the City of San Antonio City Council and updated as needed, the City reserves the right to alter or amend the Climate Plan without approval from UTSA or CPS Energy. However, City will acknowledge UTSA did not participate in any amended or revised versions of the Climate Plan prepared without UTSA's contribution.

15. Amendments. Other than the Collaboration Agreement, this Agreement constitutes the entire and only agreement between the Parties relating to the Scope of Work under Appendix A, and all prior negotiations, representations, and understanding are superseded hereby. No agreements altering or supplementing the terms hereof may be made except by means of written document by duly authorized representatives of the Parties, provided that deliverables meet the requirements of the Collaboration Agreement.
16. Liability. Each Party shall be responsible for its own actions and those of its employees and/or persons acting by or on its behalf, along with any liability arising from such activities while carrying out the purpose of this Agreement. Each Party agrees to have sufficient insurance in place to cover all obligations assumed in this Agreement and any liabilities arising while carrying out those obligations.
17. Term. This Agreement is intended to be effective upon execution by the last Party, after approval from their governing bodies as required, through April 30, 2019, but may be terminated at an earlier time by written approval of the Parties or as indicated in Section 6 or section 7 of the Agreement.

**EXECUTED IN TRIPLET ORIGINALS, EACH OF WHICH SHALL BE
CONSIDERED AN ORIGINAL.**

CITY OF SAN ANTONIO

By _____

Name

Title

Date

UTSA


By _____

Can Saygin

Name

Associate Vice President for Sponsored
Project Administration

Title


Date

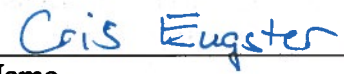
Approved as to Form:

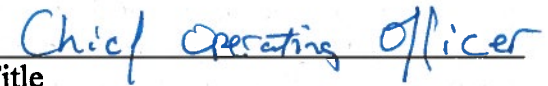
City Attorney

Date

CPS ENERGY


By _____


Name


Title


Date

[INCLUDE THE MOST CURRENT SCOPE OF WORK AS APPENDIX A]

Proposed Approach for

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

Prepared by:

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CPS Energy: Rhonda Krisch

September 30, 2017



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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 from 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 will 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 involves 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*

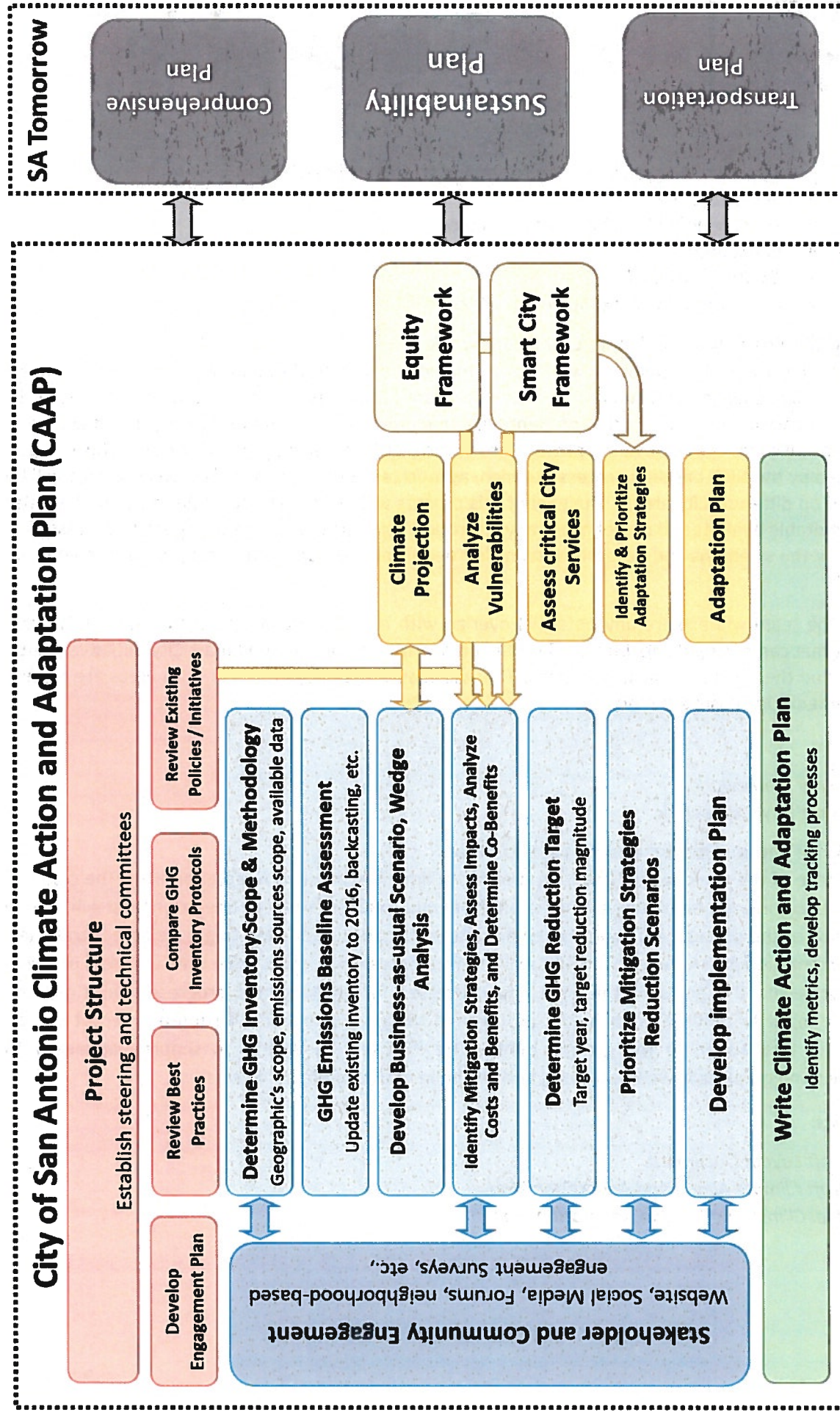


Figure 1: Process of Developing City of San Antonio Climate Action and Adaptation Plan

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

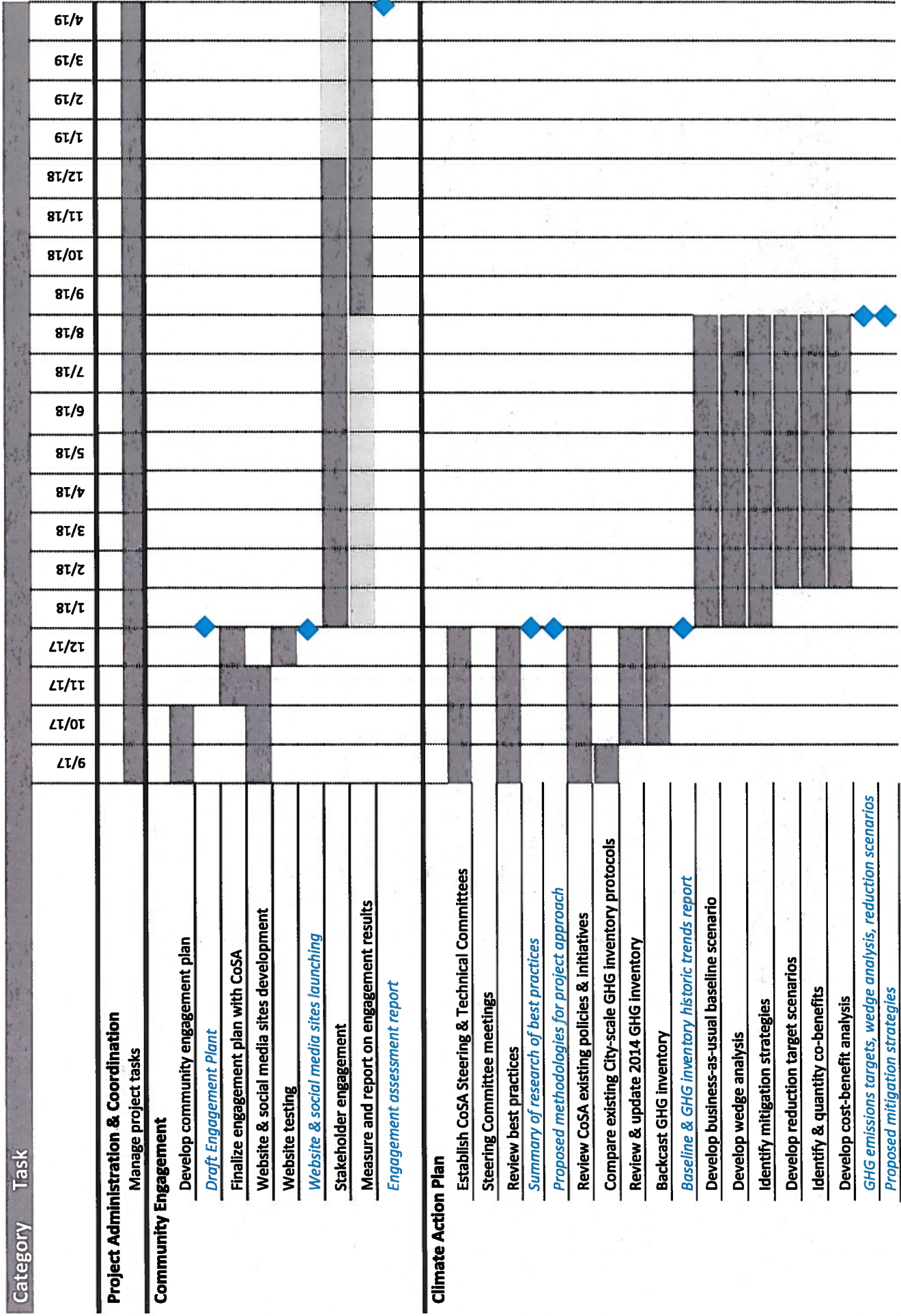
3.3. Phase 2: Post-Plan

- 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

4. PROPOSED PROJECT SCHEDULE



Figure 2: Summary project schedule



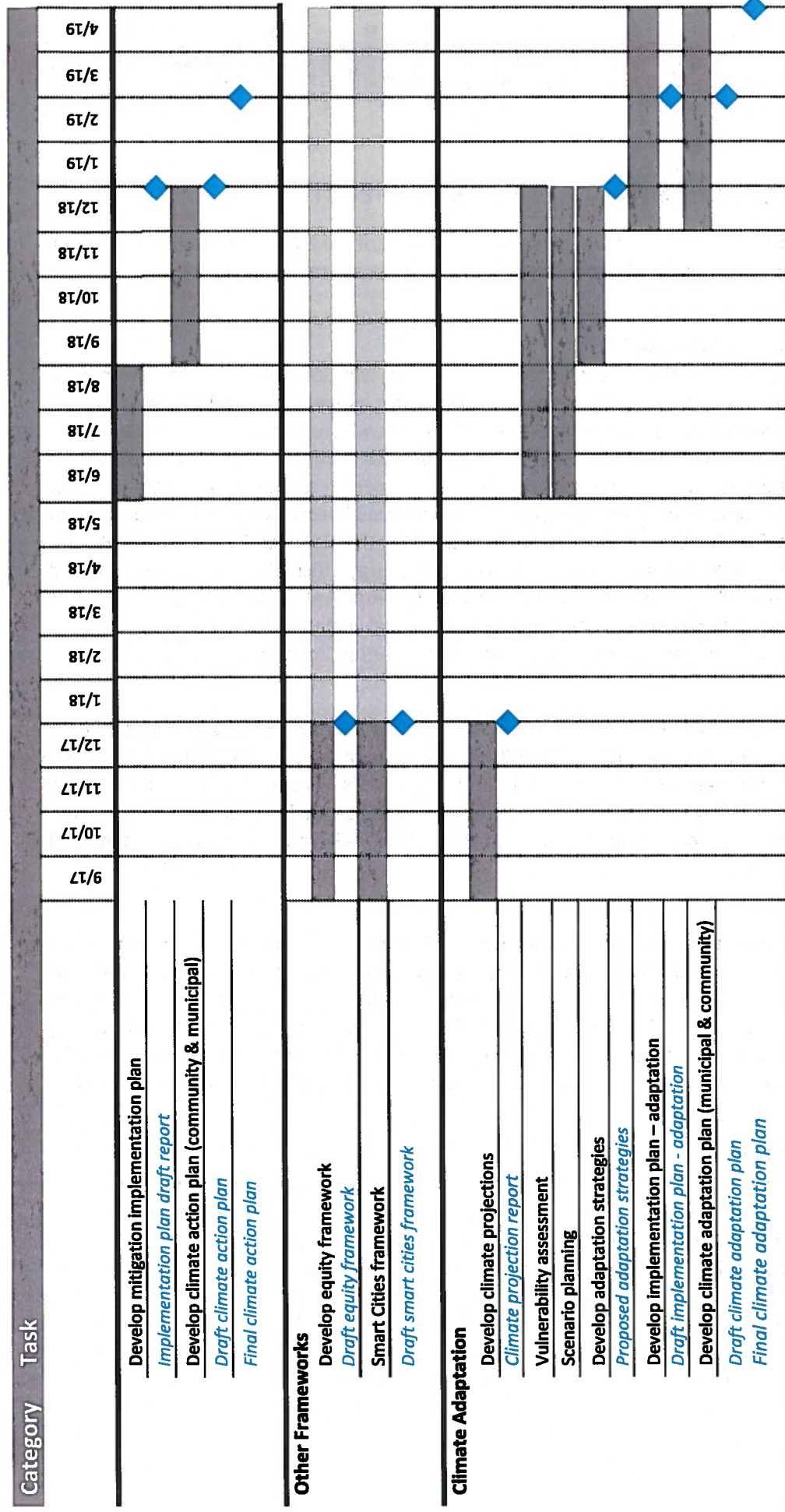


Figure 3: Detailed Project Gantt Chart

5. TEAM MEMBERS ROLES AND RELEVANT EXPERTISE

The following provides a brief description of the roles and experiences of the UTSA team members. Several of the team members, including the PI, will be receiving teaching releases to allow them to focus on this critical project.

5.1. Hazem Rashed-Ali, PhD, LEED AP BD+C:

Dr. Rashed-Ali will be the UTSA project manager and lead PI. He will be responsible for the overall planning, coordination and implementation of various project tasks as well as coordination of project activities with CoSA, CPS Energy and other possible stakeholders. He will also be responsible for the GHG-inventory-related tasks and the scenario development tasks. Dr. Rashed-Ali is an Associate Professor in the UTSA College of Architecture. His research expertise focuses on building and community sustainability and environmental impact. Some of his relevant research projects include conducting the Neighborhood Sustainability Assessment for the City of San Antonio (funded by the CoSA Office of Sustainability), conducting GHG inventories for local commercial companies, and energy efficient retrofits of historic and low-income homes. Dr. Rashed-Ali was also involved in the development of the SA tomorrow Plan including serving on the steering committees of both the Comprehensive plan and the Sustainability Plan. He currently serves on the Comprehensive Plan Implementation Steering Committee.

5.2. Hatim Sharif, PhD:

Dr. Sharif will be a Co-PI on the project. He will be responsible for the adaptation tasks including climate analysis and climate projection, and community and City department resilience tasks. He will also work on the GHG reduction scenarios, and cost benefits analysis. Dr. Sharif's is a Professor in the UTSA College of Engineering. His expertise is in the areas of remote sensing, climate analysis, climate change, and modeling. He has received numerous grants in this area from NASA, NSF, and other federal and local agencies.

5.3. Rob Tillyer, PhD:

Dr. Tillyer will be a Co-PI on the project. He will be responsible for the community engagement tasks including developing and implementing a community engagement plan and conducting stakeholder and community engagement meetings. He will also lead the tasks focusing on equity and Smart Cities. Dr. Tillyer is an Associate Professor in the UTSA College of Public Policy. He has extensive expertise in working with local government agencies and other public stakeholders and in planning and implementing public engagement activities. He is also currently leading UTSA's efforts in the area of Smart Cities working with different CoSA department.

5.4. Francine Romero, PhD:

Dr. Romero will be a Co-PI on the project. She will participate in the project's engagement tasks including developing and implementing a community engagement plan and conducting stakeholder and community engagement meetings. She will also participate in the equity framework. Dr. Romero is an Associate Professor in the UTSA College of Public Policy. She has extensive experience in community engagement and public policy projects. She has been an active participant in numerous panels and commissions at the City level including the City's zoning and planning commissions. She was also heavily involved in the development of the SA Tomorrow Comprehensive plan. Her public policy experience will allow better identification of co-benefits and/or risks associated with any proposed strategies.

5.5. Roger Enriquez, JD

Dr. Enriquez will be a Co-PI on the project. He will participate in the project's engagement tasks including developing and implementing a community engagement plan and conducting stakeholder and community engagement meetings. She will also participate in the equity framework. Dr. Enriquez is an Associate Professor in the UTSA College of Public Policy, and the Director of the UTSA Policy Studies Center. He has extensive expertise in public engagement and public policy projects including developing and deploying public survey, and methods of informing policy decision making through evidence-based research and dialogue.

5.6. John Merrifield, PhD:

Dr. Merrifield will be a Co-PI on the Project. He will be responsible for the cost-benefit analysis tasks and the identification of possible co-benefits. Dr. Merrifield is a professor in the UTSA College of Business. He has been doing benefit-cost analysis and simulation analysis for 36 years. Recent work includes national debt studies, online calculators for fiscal notes, and an assessment of Franchise Tax repeal for Governor Greg Abbott. He has extensive experience doing water project benefit-cost analysis, including for the San Antonio Water System, and for Surface Water projects considered for the state water plan. Most recently, he estimated the teacher salary impact of a school choice proposal that passed the Texas Senate (no vote in the House). He used property value data to determine the impact of the Edgewood Tuition Voucher program, and to estimate the impact of burning hazardous wastes in cement kilns. Before coming to UTSA, he participated in impact assessment studies of Energy Boomtowns, including an infrastructure adequacy study for Wyoming Governor Ed Herschler, and an impact assessment of the Reagan Administration proposal to cite the "Peacekeeper Missile" in Midwestern state

5.7. Keith Muhlestein, PhD:

Dr. Muhlestein will be a Co-PI on the project. He will participate in the climate analysis, strategy identification, and public engagement tasks. Dr. Muhlestein is the UTSA first Director of Sustainability. His experience ranges broadly from governmental agencies to academia. His scientific research includes work in sustainable energy, statistical analysis, remote sensing, land use/ land cover (LULC), and cave and karst. Keith's experience includes 15 years as the City of San Antonio and Brooks City Base's Environmental, Science, and Natural Resources Manager. In those 15 years he was the City's liaison to all area military bases and a member of the Restoration Advisor Boards and Technical Advisory Groups for environmental analysis and remediation. He has extensive experience in community engagement, community forums, stakeholder meetings, and neighborhood outreach. He has worked closely with many City Councils and Mayors. Dr. Muhlestein has developed extensive media outreach campaigns including social media, a sustainability video series, and has been a guest on local radio and National television programs including the Science Channel.

6. BENEFITS FROM A COSA/CPS Energy/UTSA PARTNERSHIP IN DEVELOPING THE COSA CAAP

- The UTSA team consists of a number of experts with extensive and varied sets of expertise including community and building sustainability, GHG inventories, climate change, resilience, economic analysis, public engagement, and public policy. This range of expertise will allow the UTSA to not only fully implement the tasks of the project but also to explore and take into consideration the range of benefits and costs that the proposed strategies can have on other City policies and programs. Such a set of expertise will be difficult to find in any other non-university consultant.
- Several of the team members have extensive prior experiences in working with different City departments both in implementing research and community service projects and as members of a variety of committees, boards and commission. Two team members, the PI Dr. Rashed-Ali and Dr. Romero, participated heavily in the activities of the SA Tomorrow Comprehensive and Sustainability Plans over the last 2 years. Another team member, Dr. Tillyer, is currently leading UTSA's efforts to work with CoSA in the Smart Cities area, which is also part of the scope of work of the CAAP. This prior experience and intimate knowledge of the City will be valuable for the team in engaging different stakeholders across the City, whose support will be critical for the success of the plan.
- This project will be part of the larger partnership between CPS Energy and UTSA, which has been supported by the City starting from Mayor Castro, Mayor Taylor and now Mayor Nirenberg. This partnership has been very beneficial for both UTSA and CPS Energy, and adding the CAAP project to it will add a new and very important dimension given how the CAAP project deals directly with the City and has the potential to impact its future planning and other policies.
- The project fits directly within UTSA's community engagement mission, a mission all team members believe in and are strongly committed to
- The project will help further develop research capacity in UTSA and will allow the university to enhance its abilities in the areas of climate change and community sustainability, which ties directly to several of the university's strategic goals.
- The project will also greatly benefit UTSA students both directly by hiring 5 Graduate Research Assistants to work on different project tasks, and potentially several more to participate in the community engagement activities within the project, and indirectly as the expertise gained from the project gets integrated into the teaching activities of the project team. As UTSA is the largest university in San Antonio, any benefits to UTSA are also considered as benefits to the City as a whole.

REFERENCES

- AECOM (2017). CURB, Climate Action for Urban Sustainability. C40 Cities Climate Leadership Group. Available electronically at: <http://www.c40.org/programmes/climate-action-for-urban-sustainability-curb>
- Carbon Neutral Cities Alliance (2017). Carbon Neutral Cities Alliance, A project of the Urban Sustainability Directors Network. Available electronically at: <https://www.usdn.org/public/page/13/CNCA>
- C40 (2017a). CIRIS, City Inventory Reporting and Information System. C40 Cities Climate Leadership Group. Available electronically at: <http://www.c40.org/programmes/city-inventory-reporting-and-information-system-ciris>
- C40 (2017b). C40 Cities Climate Leadership Group. Available electronically at: <http://www.c40.org/>
- GHG Protocol (2014). Global Protocol for Community-Scale Greenhouse Gas Emission Inventories, An Accounting and Reporting Standard for Cities, GHG Protocol. Available electronically at: http://www.ghgprotocol.org/sites/default/files/ghgp/standards/GHGP_GPC_0.pdf
- Global Covenant of Mayors (2017). Global Covenant of Mayors for Climate and Energy (2017). Available electronically at: <http://www.globalcovenantofmayors.org/>
- Hayhoe, K., Stoner, A. and Gelca, R. (2013). Climate Change Projections and Indicators for Delaware. ATMOS Research & Consulting. Available electronically at: http://www.dnrec.delaware.gov/energy/Documents/Climate%20Change%202013-2014/ARC_Final_Climate_Report_Dec2013.pdf
- ICF International (2013). User's Guide: Local Government Greenhouse Gas Accounting Tool. Prepared for: New York State Energy Research and Development Authority (NYSERDA). Available electronically at: <http://www.midhudsoncsc.org/documents/Local%20Govt%20GHG%20Accounting%20Tool%20Users%20Guide%20-%20FINAL.pdf>
- ICLEI (2013). U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Version 1.1. ICLEI USA, Local Governments for Sustainability. Available electronically at: <http://icleiusa.org/publications/us-community-protocol/>
- Prazen, J. (2009). Lessons Learned: Creating the Chicago Climate Action Plan, City of Chicago Department of Environment.
- STAR Communities (2017). STAR Communities, Set Goals, Measure Progress, Improve Your Community. Available electronically at: <http://www.starcommunities.org/>
- TCR (2010). Local Government Operations Protocol For the quantification and reporting of greenhouse gas emissions inventories Version 1.1, The Climate Registry. Available electronically at:

US EPA (2011). Assessing the Multiple Benefits of Clean Energy, A Resource for States, EPA-430-R-11-014, U.S. Environmental Protection Agency

Portland, OR – Climate Action through Equity

USDN – Guide to Equitable, Community-Driven Climate Preparedness Planning

Georgetown Climate Center – Opportunities for Equitable Adaptation in Cities

Government Alliance on Race & Equity – Racial Equity Toolkit

Atmos Research & Consulting – Climate Change Projections for the City of Austin

APPENDIX I: LIST OF PRIOR RELEVANT EXPERIENCES

Hazem Rashed-Ali, PhD, LEED AP BD+C:

- ***City of San Antonio Neighborhood Sustainability Assessment***
Funded by the City's Office of Sustainability, this 2-year project involved calculating 29 sustainability indicators for each neighborhood in the City of San Antonio. Indicators included four CO₂ emissions indicators: Residential building emissions, non-residential building emissions, home based vehicle emissions, non-home-based vehicle emissions.
- ***GHG Inventory of WW Wood Company***
This project used the GHG Protocol Corporate Standard to develop a scope 1 & 2 GHG inventory of the company's operations.
- ***GHG Inventory of Harlan Clark Company***
This project used the GHG Protocol Corporate Standard to develop a scope 1 & 2 GHG inventory of the company's San Antonio facility.
- ***Carbon Neutral Design Project***
This joint project between the American Institute of Architects (AIA) and the Society of Building Science Educators (SBSE) included about 30 architecture educators across the US and focused on analyzing the carbon footprint of buildings as well as identifying and developing innovative teaching methods for the carbon neutral design of buildings.
- ***Teaching Activities***
Dr. Rashed-Ali has been integrating topics of carbon foot-print and environmental impact of buildings and communities into his courses for more than 10 years. His courses on Building Technology, Building Performance Analysis, and Neighborhood Sustainability include the teaching of a variety of methods and approaches of assessing energy use, carbon footprint, and other environmental impacts

Hatim Sharif, PhD:

- ***Climate Projections and Climate Change, and Public Engagement***
This is one of Dr. Sharif major areas of expertise. He has published extensively on the topic (example publication, Le and Sharif (2015), attached.

Dr. Sharif was funded by NASA to promote climate change understanding and its impacts on the region. The project included preparing webcasts for public engagement. An example of a webcast is included here: <https://www.youtube.com/watch?v=4TwB3Bb-RWU>
- ***Synthesis of Hydrologic and Hydraulic Impacts:***
This TxDOT funded project aimed to assess the hydrologic and hydraulic impact of their activities. This projects also included meetings with many TxDOT engineers and visits to all districts and administering and analysis of mail-in surveys.

- ***Economic and Safety Benefits to Texas Travel Information Centers***
This project was funded by TxDOT and recommended by Texas legislature. The project was renewed for a second year and an updated assessment report produced (both reports attached).
- ***Teaching Activities***
Dr. Sharif has been teaching a doctoral Global Change course for more than 10 years. His course includes development of emission pathways, Climate change impacts, climate change adaptation and mitigation, and the community role in mitigation and adaptation.

Community Engagement team (Rob Tillyer, PhD, Francine Romero, PhD, & Roger Enriquez, JD)

- ***Town Meeting for the City of Leon Valley (2015-17)***
 - PI: Dr. Francine Romero
 - Synopsis: The major agenda-setting event for the City each year, and policy decisions follow directly from the Follow-up Report/Recommendations (<http://www.leonvalleytexas.gov/Lion's%20Roar%20V13I2.pdf>).
- ***City of San Antonio Citizen Survey of Budgetary Priorities (2016)***
 - PIs: Dr. Rob Tillyer & Prof. Roger Enriquez
 - Synopsis: A collaborative project with the COSA Department of Government and Public Affairs to assist with the SpeakUp San Antonio initiative. This project involved student support at City events and a survey of residents to collect their opinions toward budget priorities for the upcoming fiscal session.
- ***SAWS Partnership Public Meetings on Water (2014)***
 - PI: Dr. Francine Romero
 - Synopsis: Established and implemented a partnership with San Antonio Water System (SAWS) to hold public meetings on water issues. Also appeared as a panelist for the final event.
 - <http://nowcastsa.com/webcast-conversations-water>
 - <https://therivardreport.com/utsa-water-forum-saws-ceo-says-vista-ridge-project-on-track/>
- ***Eagle Ford Shale Region Project (2013-14)***
 - PI: Dr. Francine Romero
 - Synopsis: Shell Oil provided a \$160,000 grant to deliver a municipal capacity-building program to elected and appointed officials in the Eagle Ford Shale Region. Sole responsibilities included developing/managing curriculum and securing speakers, and co-responsibility for managing the budget. Roughly 60 local officials received two separate programs of five sessions. Several participants submitted municipal enhancement proposals that also were supported by the grant.
 - <https://www.utsa.edu/today/2013/06/shalemeetings.html>; (Additional attachments provided—Program MOU and final report)
- ***Lead Partner for Government Accountability and Civic Engagement for SA2020 (2012)***
 - PI: Dr. Francine Romero
 - Synopsis: Worked collaboratively with the main SA2020 team and organized/hosted a number of public events. Also, organized and presented at a major community meeting on civic engagement and the SA2020 plan (see second link for NowcastSA video).

- <http://www.utsa.edu/communityconnect/2012/stories/sa/Public-Policy.html>
- <http://nowcastsa.com/sa2020/people/francine-romero>

The engagement team also possesses extensive experience in organizing and hosting community events, including several recent San Antonio town halls on topics such as Gentrification, Sanctuary Cities, Property Tax, The Future of Downtown, and a one on one conversation with Mayor Ron Nirenberg. Much of this involves working with public input on the front end to craft questions that reflect citizens' concerns. Dr. Romero, in particular, has also worked extensively with the City of San Antonio. She was a member of the Planning Commission from 2004-08 and since 2013 she has served on the Zoning Commission as the D8 representative and since 2016 as Commission Chair. She is also the Chair the Conservation Advisory Board, which is the recommending body to City Council on the Edwards Aquifer Protection Program, currently overseeing a \$100 million budget. Finally, our team has extensive experience with researcher-practitioner partnerships including work in a variety of cities across the nation and locally (e.g., with the San Antonio Police Department) on topics of public interest. These efforts frequently involve data collection using survey and focus group methodologies to collect and analyze public opinions on policy-related topics. In short, our team has worked extensively in the public sphere to address policy issues for the majority of our professional career and collectively represents roughly 40 years of experience.

John Merrifield, PhD:

- Online Fiscal Notes Calculator for Private School Choice Legislation. Sponsored by the American Federation for Children and the Friedman Foundation for Education Choice. Online in 2014. (<http://school-choice-fiscal-notes-calculator.net/>)
- Fiscal Simulations – 2017) Koch Foundation; 2014) Coalition for Reduced Spending; 2012) Montana Policy Institute; 2011) Kansas Policy Institute; 2009-2011) Sutherland Institute (Utah).
- School System (K-12) Reform Studies - 2013) National Center for Policy Analysis; 2011) Heartland Institute; 2010) Kansas Policy Institute; 2009) CEO Foundation; 2007) E.G. West Centre; 2006) Fraser Institute.
- San Antonio Water System (2009): Assess Aquifer Storage and Recovery management options.
- Environmental Defense - 2002-04) Public Finance Template for Water Projects; 2000-01) Texas Water Plan; 1997-98) Texas Bay Shrimp Fishery; 1995-96) Benefit-Cost Analysis; 1994) Edwards Aquifer/Applewhite Reservoir; 1993) Endangered Species Act reform.
- "School Choice: Agent of Change" for the 'School Choices' website (Fall 2000)
- "Air Quality: How to Keep San Antonio's Attainment Status" for the UTSA Metropolitan Research and Policy Institute (Spring 1999).
- Metropolitan Research and Policy Institute (Spring 1999).

